Postnatal depression in fathers: Does prenatal preparation and experience in care-giving assist the transition to fatherhood?

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Abstract

Thirty-two first time fathers participated in this study which was primarily concerned with how men prepare for fatherhood and whether previous interactions with children equips men with necessary experience to alleviate the development of post natal depression. Fathers completed questionnaires and correlation analyses were used to test the relationship between paternal post natal depression and prepatory activities such as seeking information about parenthood, and previous interaction with children. The results of the current study revealed that there was a relationship between fathers seeking information from books, internet, and videos relating to parenthood, and a reduction in reported anxiety and insomnia. This kind of preparation for parenthood may be crucial in the decision making process when planning the birth of a child, which was also linked to reduced feelings of depression in new fathers. The study also identified that fathers who had some previous interaction with children were less likely to report psychological distress. These results could indicate that men should be supported to interact with children during their lifetime. Furthermore, fathers who reported social support felt that they play an important role in caring for their child and this reflects social support may be an important factor in facilitating the transition to role as caregiver. This attitude was also related to fewer experiences of psychological distress.

During the last twenty years, there has been an increase in the interest of fatherhood and the father's role in parenting (McBride and Rane, 1997). More recently, research regarding the impact of fatherhood on males and the development of post natal depression has been instigated. However, community awareness of post natal depression in males is still relatively low and is not as well recognised as it is in females. This may be due to the fact it is a condition primarily associated with mothers (McBride and Rane, 1997). The following review of the literature, will attempt to demonstrate that post natal depression is not necessarily a gender specific condition nor is it confined to a particular socio-economic status, or specific cultural or age group. It is a condition which can affect anyone who has a child, although there is a need to elucidate the factors which lead to greater risk of developing it.

The post natal depressive disorders exist on a continuum. In a review by O'Hara (1987) reporting studies which deal only with women, a number of indices are identified to differentiate these syndromes. They include; severity of symptoms (such as disturbed sleep, impaired concentration), degree of impairment of functioning (such as functioning as a parent, spouse and employee) and the duration of the episode. Although currently there are relatively good prognoses for post natal disorders, if left untreated they can produce serious psychological impairment with long term consequences. These can impact not only on the woman, but her marital relationship and the adjustment of their child (O'Hara, 1987).

The increased risk of developing affective disorders for new mothers can in part be attributed to the major adjustment required in the first weeks after the birth of a child (O'Hara, 1987). In addition to the physical and hormonal changes associated with

pregnancy and birth, other factors include the demands of infant care and juggling family, working commitments as well as their social life. These can all impact on a parent's ability to cope. Psychological disturbance reflects the poor preparation and adjustment to these changing responsibilities (O'Hara, 1987).

A review of the literature has allowed for discussion of each of the post natal syndromes identified, with a focus on symptomatology, prevalence, aetiology and treatment.

What are Post Natal Disorders?

Postnatal (or post partum) psychological disorders are a phenomenon which are becoming increasingly recognised following the birth of a child. According to the literature there are three psychological disorders which may accompany childbirth (O'Hara, 1987; Mental Health Association of Queensland, 2000; Najman, Anderson, Bor, Callaghan and Williams, 2000). These are post natal blues, depression and psychosis. They will now be discussed.

Post Natal Blues

Of the three disorders, the post natal blues are the most prevalent and are estimated to affect between 50 and 80% of women (Lanczik, Spingler, Heidrich, Becker, Kretzer, Albert and Fritze, 1993; Mental Health Association of Queensland, 2000; O'Hara, 1987; Post and Ante Natal Depression Association, 2001). However, the type of symptoms and instruments used to measure post natal blues determines the rate

reported in the community (O'Hara, 1987), which is why prevalence rates vary from study to study.

Post natal blues usually occur between the third and tenth day after the birth of a child (Lanczik, Spingler, Heidrich, Becker, Kretzer, Albert and Fritze, 1993; Mental Health Association of Queensland, 2000; O'Hara, 1987; Post and Ante Natal Depression Association, 2001). The predominant explanation for the post natal blues is that it has a biological basis (O'Hara, 1987). The high prevalence rate can be attributed to the natural physiological increase in levels of oestrogen and other hormones (progesterone, prolactin and cortisol) which affect mothers during the end of the pregnancy and birth, and then drop significantly within the first ten days (O'Hara, 1987).

Symptoms

The symptoms primarily associated with the blues include anxiety, confusion, mood lability and crying, however, other symptoms include depressed mood, irritability, sleep disturbance and appetite changes. According to the biological theory, hormones play a role in mood disturbances during the post natal period in a similar way to that experienced during the premenstrum and menopause (O'Hara, 1987).

Etiological Factors: A Biological Process

The negative feelings of irritability, tearfulness and emotional distress which follow the reduction in hormone levels after the birth of a child, can be explained by a biological process in the brain. During times of stress, there is a secretion of hormones which are controlled by the hypothalamus, a structure located in the

midbrain. The hypothalamus secretes hormones itself and is also involved in the regulation of other brain regions which release hormones. The hypothalamus is also part of the limbic system, which is made up of a number of structures such as the amygdala, thalamus, mamillary bodies, cingulate cortex and hippocampus (Banich, 1998). During stress, the hypothalamus releases the corticotropin releasing hormone (CRH) which increases the level of cortisol (the stress hormone) in the blood and assists the person to be active or mobilised (Banich, 1998). These increases can also be found during the final trimester of pregnancy to ensure the safety of the foetus. Following birth and the removal of the placenta the CRH then decreases, along with oestrogen and progesterone, to levels which are similar to those found in people with clinical depression (Mental Health Association of Queensland, 2000; Post and Ante Natal Depression Association, 2001).

The support for the role of hormones in post natal blues, however, has produced mixed results in the research. A study by Feksi, Harris, Walker, Riad-Fahmy, & Newcombe (1984) in support of the role of biological processes revealed that higher levels of progesterone and oestridol were found in women experiencing the blues than women without this syndrome. Furthermore, Nott, Franklin, Armitage & Gelder (in O'Hara, 1978) found increased depression when there were greater drops in progesterone after the delivery of a baby. However a study by Metz, Stump, Cowen, Elliott, Gelder & Grahame-Smith (in O'Hara, 1987) was unable to support this hypothesis when they failed to find a significant relation between oestrogen and the blues.

Other authors have found a possible role for tryptophan, which is a precursor of the neurochemical serotonin (a bioamine which is involved in the regulation of the sleep/wake cycle and mood). While it has been found that lower levels of trytophan have been associated with higher levels of post natal mood disturbance, one study revealed that more severe experiences of post natal blues were attributed to delayed rises in tryptophan after delivery Gard, Handley, Parsons & Waldron (1986).

Other Etiological Factors

Other factors have been investigated to identify those which may play a role in the development of post natal blues. Factors such as demographics (age, SES), stress, hospitalization, breast feeding and psychiatric history so far have not been found to be associated with the blues (O'Hara, 1987). This may further support the notion that biological processes play a major role in the experience of post natal blues.

Prognosis and Treatment

O'Hara (1987) reports that there is no real evidence to suggest significant impairment is produced in women experiencing post natal blues. Although the literature suggests it may increase the risk of developing post natal depression, this is inconclusive. Furthermore, research has still not been determined whether the post natal blues are an early stage of post natal depression or whether it is a distinct condition (O'Hara, 1987).

Treatment is not usually required for the post natal blues. When the hypothalamus returns to its normal level of functioning (usually within the first ten days), symptoms of the baby blues begin to remit also (Mental Health Association of Queensland,

2000). Counselling may be required to address the confusion that new mothers and fathers may experience regarding these negative feelings. This maximises the possibility that the rest of child rearing is pleasurable (Mental Health Association of Queensland, 2000).

Post Natal Psychosis

Post natal psychosis is at the other end of the spectrum in terms of severity. During psychosis a person loses touch with reality. The condition is associated with gross impairments in ability to function due to hallucinations or delusions, as well as depressed mood and confusion (O'Hara, 1987; Post and Ante Natal Depression Association, 2005). The mother may fail to recognise that she requires treatment and due to this it is important that she has support from family and friends

Prevalence and Symptoms

The rate of post natal psychosis is reported to be relatively rare and this appears to be consistent in the literature across time. Although slightly dated, O'Hara (1987) reported that the literature at the time revealed that post natal psychosis affected 1.1-4.0 women per 1000 births. This was supported by Shapiro and Nass (1986) who reported approximately one in 400-1000 pregnancies resulted in experiences of psychosis. More current reports provided by The Post and Ante Natal Depression Association (2005) estimate that it is experienced by approximately one in 500-1000 women, usually following the birth of the first child. Furthermore, approximately 20% of these women will go on to have another episode following the birth of a subsequent child.

The symptoms associated with post natal psychosis usually appear within six weeks of delivery and are quite marked. It is well accepted that the majority of cases of post natal psychosis have an onset within the first 2-4 weeks after the birth (O'Hara, 1987; Post and Antenatal Depression Association, 2005). Although the duration of post natal psychosis is not clear, it is presumed that any psychotic experience during this period which requires treatment up to 90 days after the delivery, is considered a psychiatric disturbance (O'Hara, 1987).

Post natal psychosis is usually characterised by a number of symptoms. These include; high elated mood, low depressed mood, moods that swing between these extremes, disturbed thought processes (characterised by non-sensical, pressured speech which jumps from point to point) or bizarre thoughts and delusions, disturbed perception exhibited by auditory or visual hallucinations, disturbed sleeping and disturbed behaviour (such as responding inappropriately to the child) (O'Hara, 1987; Post and Ante Natal Depression Association, 2005).

As with other post natal disorders, studies have been interested in whether psychosis during the post natal period can be differentiated to psychosis at other times. Research has found some differences between the experiences of postnatal psychotic patients and non-postnatal psychotic patients in terms of the frequency of symptoms. Brockington, Cernik, Schofield, Downing, Francis & Keelan (1981) compared 58 post natally psychotic women with 52 psychotic women who had not recently had a child. While post natal mothers experienced higher levels of euphoria, activity, incompetence and confusion, the non post natal patients experienced higher levels of symptoms typical of schizophrenia such as odd affect, paranoia, social withdrawal

and hostility. As an explanation, Brockington et al (1981) suggested that post natal women may have a single etiological factor which results in an acute affective psychosis.

Couvade Syndrome in Males

Psychotic experiences are not just confined to women during pregnancy and the post natal period. Shapiro and Nass (1986) reveal that men can experience severe psychiatric experiences during their partner's pregnancy.

Couvade Syndrome is one specific psychotic disorder which is a phenomena found to be experienced by males. It is evident when fathers-to-be experience symptoms similar to their partners, during pregnancy (Shapiro and Nass, 1986). It is a spectrum disorder with symptoms ranging from physical symptoms to psychosis. Although it is not entirely clear how Couvade Syndrome develops, it is acknowledged that pregnancy and child birth can be a stressful life event, especially for mothers who have previously experienced Bipolar Disorder (Davenport and Adland 1982).

Shapiro and Nass (1986) suggest it is characterised by brief, minor or psychotic distortions of reality. Physical symptoms include; gastrointestinal disturbances such as bloating, nausea, changes in appetite, as well toothaches. Anxiety is also a common symptom of Couvade Syndrome. Shapiro and Nass (1986) suggest that these symptoms usually disappear once the baby is born, although more severe experiences can persist. Approximately 11-65% of males whose partners are pregnant are expected to experience some symptoms similar to these.

Etiological Factors

It is not entirely clear as to the etiological factors which increase the risk of psychosis in women following the birth of a child. Being a first time mother has been found to increase the risk, with primiparous women (women with their first child) being twice more likely than multiparous women (more than one child) to develop post natal psychosis (O'Hara, 1987; American Psychiatric Association, 2000).

Other factors found to play a role in the development of the disorder include increasing maternal age, short gestation and difficult labour (O'Hara, 1987), previously being diagnosed with bipolar disorder, family history of psychosis, and stress (Post and Ante Natal Depression Association, 2005). In particular, it is suggested that there is a correlation between post natal psychosis and familial or personal history of Schizophrenia or Bipolar Disorder (Queensland Health, 2003). Davenport and Adland (1982) reported that psychotic episodes in people with a diagnosis of Bipolar Disorder often lead to repeated manic episodes following the birth of a child, however prevalence rates are not provided. They report that this is often due to the chaotic nature of the home environment following childbirth.

Prognosis and Treatment

Due to the severity of post natal psychosis, once the disorder is identified treatment should be sought as this will reduce the chance of negative outcomes (such as suicide or filicide; killing one's child) and improve the mother's mental health. The prognosis for post natal psychosis is generally good provided treatment is implemented (Post and Ante Natal Depression Association, 2005).

Treatments for post natal psychosis are similar to those for psychosis at other times. The difference being that treatment practices need to take into account that mothers are responsible for their children and need to consider attachment between the mother and baby also. Hospitalisation is usually required and under these circumstances admission to an inpatient facility (such as a mother-baby unit) which allows for the admission of the baby also, is recommended but not always possible (Post and Ante Natal Depression Association, 2005).

Other therapeutic strategies such as medication (mood stabilisers, antipsychotics and antidepressants) are common. Once again, the needs of the infant must be considered especially if the mother is breastfeeding. Some medications are not recommended to be used if the mother is breastfeeding, while others are found not to effect the baby's development (Post and Ante Natal Depression Association, 2005). Electro-convulsive therapy (ECT) is used on a short term basis in women experiencing severe symptoms. All these therapies may be complimented by longer term support such as education, psychological therapy (relaxation therapy, counselling) and involvement with support groups. (Post and Ante Natal Depression Association, 2005).

The importance in treating severe post natal psychiatric conditions such as psychosis is emphasised by research which has consistently reported the impact that parental psychiatric illness has on children. O'Hara (1987) discussed research which found pre school children of women with affective psychosis were more impaired on the WIPPSI (Weschler Preschool and Primary Scale of Intelligence) than children of women without psychiatric illness. Children (not just in the post natal period) of parents with psychosis are at risk of problems with attention, impaired communication

skills, deviant behaviour at school and childhood depression (O'Hara, 1987). The impact of mental illness of children will be discussed further in this study.

Post Natal Depression

The third type of the post natal psychological disorders is depression. Although the blues affect more women and psychosis is more severe, post natal depression is the disorder which is commonly associated with adjustment to parenting due to the nature and persistence of symptoms and the point at which the symptoms occur (Najman, et al, 2000). Furthermore, while post natal blues can be considered a relatively normal response to biological changes, post natal depression can be attributed to a persistent difficulty to cope with the physical and emotional demands of child birth and the post natal period (Mental Health Association of Queensland, 2000).

Prevalence

Much of the literature reports that between 10 and 20% of women will experience post natal depression (Ballard, Davis, Cullen, Mohan and Dean, 1994; Najman, et al, 2000; Kumar and Robson, 1984, Post and Ante Natal Depression Association, 2001) although this may vary according to the social context of different cultures and the nature of expressing depressive illnesses (Matthey, Barnett, Kavanagh and Howie, 2001). Matthey, et al (2001) reveal that some cultures such as Chinese and Vietnamese are thought to be less expressive about negative emotions than others such as Australians and Italians. Furthermore, because of the different diagnostic criteria that is used for women during the post natal period and women at other times, traditionally it has been difficult to compare the rates of post natal depression with depression at other times (O'Hara, 1987).

The Edinburgh Post Natal Depression Scale was developed to identify the severity of post natal depressive symptoms in females. The development of the Edinburgh Post Natal Depression Scale addresses the limitations of other self-report measures of depression which are inappropriate when measuring depression in the perinatal and post natal period. The rationale for development was that symptoms which indicate depression (such as disturbed sleep, fatigue, and changes in weight) are also common after childbirth and therefore provide an inaccurate measure, because endorsement of these items can indicate depression (Eberhard-Gran, Eskild, Tambs, Opjordsmoen and Samuelson, 2001) when they are a normal part of parenthood. The Edinburgh Post Natal Depression Scale, however addresses the degree to which a person may experience these symptoms and whether this is outside what is ordinarily associated with parenthood.

The Edinburgh Post Natal Depression has also been validated to identify depressive symptoms in fathers. For this reason it has been used to measure post natal depression in fathers in the current study.

Symptoms

The debate that post natal depression is not a specific disorder which can be differentiated from depression at other times in a woman's life continues to be contentious. The onset of depression during the post natal period is categorised in the Diagnostic and Statistical Manual of Mental Disorders 4th Edition Text Revised (DSM-IV-TR; American Psychiatric Association, 2000).

The DSM-IV-TR states;

> " the specifier With Postpartum Onset can be applied to the current...Major Depressive, Manic, or Mixed Episode of Major Depressive Disorder, Bipolar I Disorder, or Bipolar II Disorder or to Brief Psychotic Disorder if onset is within 4 weeks after childbirth." (American Psychiatric Association, 2000, p. 422)

Puckering (2004) reveals that post natal depression is not much different from depression at any other stage of life. In terms of risk factors and response to treatment post natal depression is similar to depression at other times. In fact, "...the single unique characteristic of post natal depression is the presence of a child." (Puckering, 2004, p. 7).

The symptoms experienced during the post natal period are similar to those experienced at other times. They include fluctuations in mood, mood lability, and preoccupation with infant well-being. (American Psychiatric Association, 2000). O'Hara (1987) revealed that the disorder is also characterised by irritability, sleep and appetite disturbances, feelings of loss, fatigue, resentment, anger, insomnia and tearfulness. Anxiety and panic attacks can also occur (American Psychiatric Association, 2000).

The symptoms associated with post natal depression occur within the first year with most women experiencing them within four months of the birth of their child. While the symptoms are similar to those experienced by people at other times in their lives, the Post and Ante Natal Depression Association (2005) describe the symptoms of post natal depression as a distinct syndrome. For example, the sleep disturbances are

evident when a mother who would usually be exhausted after caring for a baby cannot fall asleep as easily as they should. This is attributed to the fact they are often kept awake or woken early by anxious thoughts and bad dreams (Post and Ante Natal Depression Association, 2005).

In terms of the duration of post natal depression, Kumar and Robson (1984) discovered that 50% of their depressed subjects had episodes lasting 6 months or more while Cox, Holden and Sagovsky (1984) found that depressed women had episodes lasting between 3 and 6 months.

Etiological Factors

A number of etiological factors have been attributed to post natal depression and these are quite different from the blues. However, previous literature indicates mixed results in relation to the factors predisposing women to this. While gynaecological and obstetrical factors are not directly related to post natal depression (Dudley et al, 2001), psychological adjustment prior to the birth, and personal and familial history of psychological disturbance do appear to play a role. Furthermore, factors such as stress during pregnancy and lack of support also place women at greater risk of developing post natal depression. The Post and Ante Natal Depression Association (2005) reports that the etiological factors for post natal depression are categorised into psychological, social and biological factors. These factors are now presented.

Psychopathology experienced by women prior to their child-rearing years can increase the risk of depression developing in women post natally. O'Hara (1987) revealed that women with post natal depression are considered to be more neurotic

than non depressed women and higher levels of anxiety during pregnancy is predictive of post natal depression also. This is consistent with research by Dudley et al (2001) who reported significant higher rates of neuroticism and introversion in depressed mothers. Areias, Kumar, Barrios and Figueriedo (1996) also reveal that the presence of depression during pregnancy can lead to a recurrence of depression in the post natal period. Previously having experienced post natal depression also increases the risk of further episodes after the birth of subsequent children (Post and Ante Natal Depression Association, 2005). Women who have experienced previous psychiatric disorders would appear to be at risk for post natal depression, as do women who report a family history (O'Hara, 1987).

O'Hara, Rehm and Campbell (1982) confide that there is conflicting evidence for the role of factors such as obstetric complications and gynaecological factors in post natal depression. Although gynaecological and obstetric factors have a great impact on parents due to the level of stress they can lead to, obstetric complications such as abortion and miscarriages have been inconsistently found to be related to post natal depression. Dudley et al (2001) supported this finding by reporting that gynaecological factors such as severe premenstrual syndrome, pervious terminations, miscarriages, stillbirths or caesarean births were not associated with maternal depression. In a study by O'Hara et al (1982) an inverse relationship was found between post natal depression and women who had a caesarean section. The explanation for this was that although these events lead to extreme stress, women had lower levels of post natal depression due to the increased levels of support and assistance they received. This support appears to compensate for the stressful event

itself. O'Hara et al (1982) suggests that this indicates the importance of social support in ameliorating the effects of stressful events during this time.

In keeping with the notion that social support is an important factor in coping with stressful events, so too are interpersonal relationships. Women who are depressed during the post partum period often report poor marital relationships after the birth of a child. However, social support during times of stress in general is considered to reduce the likelihood of depression (O'Hara, 1987). In support of this, Kumar and Robson (1984) also reported marital disharmony as a risk factor for post natal depression in women.

There has not been much support in the literature for demographic variables having an impact on post natal depression. There is a lack of consistent evidence to support marital status and maternal age as factors increasing a mother's risk of developing post natal depression (O'Hara, 1987).

Although hormonal factors play a predominant role in post natal blues they do not appear to have the same impact on post natal depression. Gard et al (1986) found no evidence of hormonal differences in post natal women who were depressed and those who weren't.

Not all women will develop post natal depression, however these factors highlight indicators which may predispose a woman to experience it. It is unusual for just one factor to be responsible for this occurring and is usually due to a unique combination of factors or a precipitating event.

Prognosis and Treatment

It is reported that post natal depression can spontaneously cease after 12 months, however if treated the symptoms can disappear quicker than this (Mental Health Association of Queensland, 2000). Furthermore, without treatment the symptoms can continue for up to four years after the birth of their child and this can take a toll not only on the mother and other family members, but also on the mother-child relationship and the development of the child (Mental Health Association of Queensland, 2000).

Up to this point, treatment of post natal depression has attempted to emphasise prevention rather than intervention. Gordon and Gordon (1960) suggested women should prevent emotional distress after the delivery. For example they recommend, not overloading oneself with extra tasks, getting plenty of rest and sleep, communicating with their partners, family and friends so that their worries are known to others, not sacrificing personal interests but rearranging schedules to reduce stress. Although this study is outdated, these recommendations are still relevant although it might not be realistic to implement all these preventative measures following the birth of a child. However they should be kept in mind as measures of self care.

Despite this, no specific treatments for post natal depression have been designed. Instead women who experience post natal depression appear to access treatments available to patients with depression and O'Hara (1987) did not find any evidence to suggest that these women did not respond as well as non post natal women. This is most likely due to the fact that much of the literature to date has found that the symptoms of depression experienced by women in the post natal period and the causal

factors associated with it, are similar to those for women at other times (Kumar and Robson, 1984).

The most common forms of treatments used are pharmacological and psychological. Antidepressant medications are thought to be the most effective form of treatment but this is up to the individual (Ante and Post Natal Depression Association, 2005). Some individuals prefer other methods to chemical interventions especially if the baby is at risk of being affected by the drugs through breast feeding. However, some drugs are safer than others. Some women prefer alternative methods such as improving diet and exercise, though this alone may not be beneficial (Ante and Post Natal Depression Association, 2005). Psychological therapy and counselling assists the woman and her partner to cope with the negative feelings of depression, self doubt and anxiety and encourages support for one another. This form of treatment can also be beneficial during the pregnancy as many couples may not be aware that their sudden negative feelings are due to depression (Ante and Post Natal Depression Association, 2005).

Post Natal Depression in Fathers

The amount of literature investigating post natal disorders has increased in recent years. However, fathers are yet to be given the same consideration during pregnancy or following the birth of a child, although they are playing an increasingly significant supportive role in the birth and post natal period. Fortunately, the literature has begun to broaden to include the impact of fatherhood on men, and Ballard and Davis (1996) consider that this has been initiated by changes in gender roles during the last 30 years.

Despite the lack of awareness in the community about the phenomenon of post natal depression in males, it has been reported that 5-10% of fathers also experience some level of post natal depression (Ballard, Davis, Cullen, Mohan & Dean, 1994) although this also depends on the time at which the depression is assessed. In addition to this, Ballard et al (1994) found 10% of fathers were depressed at six weeks post partum while 5% were still depressed at six months.

Prevalence

It has also been acknowledged that the partners of women who have some form of psychiatric illness will be at elevated risk of developing a mental health problem themselves (Zelkowitz and Milet, 2001). Dudley et al (2001) reported significant correlations between maternal and paternal post natal depression on three measures of depression. The literature reports that the prevalence of post natal depression experienced in fathers increases when their partners also have a mental illness. This can be as high as 40-50% of fathers (Harvey and McGrath, 1988; Lovestone and Kumar, 1993; The Post and Ante Natal Depression Association, 2001; Zelkowitz and Milet, 2001).

Harvey and McGrath (1988) postulated three possible explanations for increased vulnerability for these men: 1) studies investigating post natal depression in women have linked depression with increased marital difficulties, therefore these men may be more likely than usual to be involved in a difficult marriage during this time; 2) spouses whose partners have psychiatric morbidity outside the post natal period also experience a higher level of morbidity; and 3) a spouse whose partner is in hospital with a psychiatric illness has increased stress imposed on them such as caring for the

new baby as well as managing the household and other responsibilities during that time.

However, Harvey and McGrath (1988) suggested that the period just after childbirth is not essentially a time of increased psychiatric morbidity for males. It can be a very rewarding and enjoyable experience but there are significant factors which can lead to negative experiences and psychiatric responses. Harvey and McGrath (1988) compared psychiatric morbidity in men whose wives were not diagnosed with a psychiatric disorder (control group) with those whose wives had been admitted for psychiatric problems (index group). Forty-two percent (42%) of men whose partners experienced some form of psychiatric illness were diagnosed with a non-psychotic disorder such as major depression, dysthymic disorder, generalised anxiety disorder or simple phobia. In comparison only 4% from the control group developed a psychiatric disorder. Those in the index group experienced less support from their spouse, overall marital stress, lower levels of support in their social life, work or from family, as well as more stress from the extended family.

As with in the literature focusing on mothers, the literature has not found consistent evidence to make a clear assumption that depression in father's during the post natal period can be differentiated from depression at other times. Kendall et al (1976) found that there were no significant increases in the number of fathers treated for psychiatric problems over the two years before becoming a father and the one year after. However this does not rule out an increase of mild disorders which do not warrant treatment. Furthermore, Atkinson and Rickel (1984) were not able to

demonstrate a significant difference in prevalence of psychiatric illnesses in fathers before and after the birth of their child.

However, other literature proposes post natal depression is a distinct condition. At various times throughout history researchers have found that 2-4% of young males are expected to experience depression (Robins, Helzer, Weissman, Orvaschel, Gruenberg, Burke and Regier, 1984) which is less than the 10% reported in fathers at 6 weeks by Ballard et al (1994). Ballard et al (1994) suggested that prevalence then drops to 5% at six months which is more in line with the prevalence rates for the general population after father's have the opportunity to adapt to their transition into fatherhood. Furthermore, the 40-50% prevalence rate in fathers whose partners have psychiatric morbidity does appear to be higher than the 30% prevalence reported in other males whose partners are psychiatric cases, by McCarthy, Lassages and Brewin (in Ballard and Davis, 1996).

Despite the lack of clarity in reports of prevalence of depression in males in the post natal period and whether this is higher than for males in the general population, Ballard et al (1996) acknowledge that it does not detract from its importance. When a couple have a child they may already be presented with increased stresses of dealing with the adjustment to the changes in their relationship and the possibility of increased marital disharmony. This may be amplified by any mood disorder and can reduce their support and coping mechanisms and increase their distress. Dudley et al (2001) reported significant differences in paternal neuroticism and problems with dyadic adjustment (adjusting to the changing relationship) between depressed and non depressed fathers. Dudley et al (2001) also reported that the state of the marital

relationship influenced both mothers and fathers as to how they coped following the birth of their child.

Symptoms

The depressive symptoms which are experienced by males tend to be similar to those experienced by their partners. Many authors (Ballard et al, 1994; Corter & Fleming, 1995) report that males experience similar physical and emotional symptoms following the birth of their child (specifically irritability, tiredness and loss of libido) however females usually experience these to a greater degree.

The difference in severity can be explained by either mothers experiencing more severe depressive symptoms following childbirth due to greater maternal involvement, and that fathers are less likely to report their symptoms as frequently as mothers (Corter & Fleming, 1995). Traditionally, males find it hard to talk about psychological problems and if they feel they will not receive sufficient support they are less likely to seek it. Psychological distress experienced by men is considered to be different from women. Males are more likely to externalize their feelings and therefore experience disorders such as anti-social disorders and substance abuse disorders and are less likely to experience anxiety and depression in contrast to females (Dudley et al, 2001). Because males are considered to rely less on social support or ask for professional help less frequently than females, it is suggested that the externalized disorders may be a way of coping with symptoms of depression and anxiety (Weissman and Klerman, 1997).

Transition to Fatherhood

This review of previous research indicates that the transition to parenthood for fathers has generated particular interest. Father's difficulty adjusting to parenthood can be attributed to many factors, including financial problems, loss of sleep and adapting to new routines such as dinner times and social outings (Wente and Crockenberg, 1976).

Role Expectations of the Father and Social Support

Expectations of the role of parenting plays a role in shaping the father's ability to adjust, and this is more evident given the recent changes in gender roles. Both paternal and maternal expectations of parenting and their own roles can also influence their perceptions of their ability to parent and the satisfaction they derive from this. In the past, the view of the father's role has been secondary and has been considered more of a supportive role of their partner than a primary parental role (Palkowitz, 1984). Because women are returning to work quickly after the birth of their child and with changing cultural practices, the community's expectation on fathers is to play a more active role in parenting also (Araji, 1977). Fathers are now viewing their role as just as important and due to this there may be some confusion and anxiety when confronted with the notion of their impending parental role. McBride and Rane (1997) discovered that men with more favourable attitudes toward parenting were more involved in child rearing that those with less favourable attitudes. For the current study, Palkowitz's (1984) Role of the Father Questionnaire was used to measure this aspect of father's attitude to parenting. This questionnaire measures the extent that a parent believes the father's role is important to child development.

Palkowitz (1984) investigated how parental attitudes and expectations influenced the father's interactions with their child. This study revealed that parental views of the father's role and the way the father views his own role is related to the way the father behaves with his child. In particular, maternal support is positively related to behavioural aspects of the father's involvement with their child.

While investigating the impact of social support, Palkowitz (1984) also identified that lack of support for new fathers and the lack of preparation for the role of the father can entrench the mother as the primary carer of the child. Due to this, fathers tend to behave in accordance with their partner's expectations and beliefs. One interesting finding was that the mother's concept of the father's role is predictive of a significant amount of the variance in father's behaviour when the mother is present. When mothers are not present the father's concept of their role becomes a better predictor than is the mother's concept of his role (Palkowitz, 1984).

According to Palkowitz (1984), attitudes are important determinants of behaviour, however adaptability requires that people respond appropriately to situational cues. Due to this fathers should be responsive to their infant's needs and situational demands as interpreted through their attitudes and beliefs systems. The best predictor of father's behaviours when they are alone with their children, is their child's needs (Palkowitz, 1984).

While reviewing the literature investigating post natal depression in fathers, the Social Support Network Inventory was identified as a tool used in other studies to measure the importance of social support (Ballard et al, 1994;). The rationale for using this

tool was due the fact that social support networks can assist in reducing the impact of stress on psychological and physical wellbeing. For this reason it was sought from the author and used to establish some consistency in the research.

Another recent study, conducted by Professor Ian Hickey of the Beyond Blue initiative (2004) investigated the transition to fatherhood. He made the conclusion that following the birth of a child, fathers struggle to cope with the new regime of more chores, less or no sex, competing for their partner's affection, reduced sleep and juggling work with a need to be at home. He suggested this is in part attributed to unrealistic expectations of adjustment to parenthood and how fathers might have been able to hold the family together.

Other research has reflected on the impact that changing gender roles has had on fathers. Araji (1977) concluded that fathers face a conflict between the traditional role of providing economic support for the family with the increased pressure for fathers to take a more active role in parenting. Furthermore, the increased desire of mothers to get back into the workforce has required fathers to increase their input into parenting (Lamb and Bronson in Ballard et al, 1996). However, this may not necessarily be accompanied by appropriate preparation. Cronenwett and Kunst-Wilson in Ballard et al (1996) report that fathers have less time to prepare for parenting than mothers. This is due to reduced preparatory educational input and less informal passing of information from the family network to the father.

Wente and Crockenberg (1976) suggested that the difficulties experienced by fathers while adjusting to fatherhood could be explained by a shift within the family dynamic

from husband and wife, to including an infant. The consequence of this shift is considered to disrupt the intimacy established in the dyadic relationship between the husband and wife. Aspects of the relationship which may be disrupted by this shift include sex, time for talk and sharing experiences. Furthermore, fathers are more likely to be affected by this disruption because the mothers are immediately involved with the baby and are able to maintain a level of intimacy (Wente and Crockenberg, 1976).

Other Factors Impacting on Fatherhood

The experience of childbirth has been studied thoroughly as it can influence the enjoyment of this time and impact on the subsequent relationship between parents and their baby. As previously stated, there is conflicting evidence in relation to the impact that complications during the birth can have on a couple (O'Hara et al, 1982). O'Hara et al (1982) discussed that in some cases complications can lead to increased support which may reduce the impact of the stressful situation. However, complications during childbirth can also contribute to post natal psychological disorders as it places additional stress on an already emotional situation.

From a new father's point of view caesarean births, which involve the mother being placed under general anaesthesia, is particularly worrying especially if the father is not permitted to attend the birth under these circumstances. In a brief report by Koppel and Kaiser (2001) who interviewed 18 fathers whose wives were under general anaesthetic, only four (22%) of them were present for the birth of their child. Of the remaining 14, only one chose not to attend. Extreme stress was a common symptom for the fathers who were unable to accompany their wives during the surgery, with 77% reporting mental exhaustion after hours of waiting. Father's

reported this was attributed to the poor attention paid to them and they had no indication as to how their wives were doing (Koppel and Kaiser, 2001). Although men are now permitted to enter maternity wards and be present during the birth of their child, there are many biasing elements in attitudes towards father's involvement in parenting.

Other factors which have been studied in relation to post natal depression in men, are unemployment and age. Unemployment is associated with depression in general, however Ballard et al (1996) hypothesize that in new fathers this can be attributed to the fact that they have been forced into a major child care role which they may not have chosen. Although age has not generally been found to correlate with depression in new fathers, Ballard et al (1996) report that males over 30 years of age were at lower risk of developing depression in the post natal period and this is probably due to their additional life experience and maturity.

In this day and age, couples are having children later in life anyway. The Australian Bureau of Statistics (2005) report that couples are delaying childbirth due to lifestyle choices, financial reasons, career and employment, health, fragility of relationships and dislike of children. In 2005 the average age of mother's giving birth was 30.7 years and this had risen from 27.3 years in 1985. For fathers, the average age had risen from 30.1 years in 1985 to 32.9 years in 2005 (The Australian Bureau of Statistics, 2005).

Exposure to and Involvement in Parenting

One factor which has not been explored, or has been brushed over in the literature, is the relationship between male's preparation for fatherhood, and their subsequent adjustment to fathering.

While women regularly consult with doctors at checkups for their babies in-utero and following the birth, fathers must go on with the routine of every day life (such as continuing employment and contributing to housework duties) but with the added stress of having a new person to provide for. This experience for fathers may be totally different from the mother's as they do not have the continuous exposure and bonding time with the child during the day. While new mothers have time off work leading up to and following the birth of their child, paid paternity leave is still not offered in Australia, unless it is negotiated with an employer.

Another factor which has been overlooked is father's exposure to or involvement in parenting prior to them being fathers. There is no substantial research to date which has addressed the idea that perhaps exposure to a child, even before the birth of their own, may impact on the response that a father has when first having to deal with his own child. Dudley, et al (2001) acknowledged that men often have less experience in child rearing and caring for children in contrast to their partners. Corter and Fleming (1995) suggested that fathers experience negative attitudes towards the caregiving of their child especially if they have not had previous exposure to caring for a child. Previous interactions with a child, especially with the involvement of cleaning, feeding and nurturing, may provide insight in to the kind of responsibility a child is,

and may minimise the impact that child rearing has on a male. Corter and Fleming (1995) also revealed that the negative feelings associated with caregiving can contribute to the quality of the parenting role and may be responsible for differences in mothers and fathers.

Colman and Colman (1971) highlighted that in general men have no formal training for fatherhood. Furthermore when they are growing up boys are rarely involved in learning father functions and are rarely prepared for their future role as a father. They are not usually involved in babysitting or taking classes which are focused on child development. Although this line of thinking is a little outdated and the gender roles of men and women are beginning to blend, traditionally men who are about to become new fathers are not involved in preparing for parenting to the extent that women are, although community awareness in relation to this is improving.

As this factor has not been investigated in this context in the past, in order to measure it, the authors developed the Exposure Interview for New Fathers questionnaire for this study. The purpose of the questionnaire was to identify the extent to which fathers have been exposed to playing a role in caring for children, as well as preparing for fatherhood by accessing information about parenting which provides insight into what they may expect as a parent.

Impact of Parental Distress on Children

One theme that became evident during this review was that post natal psychiatric disorders do not just impact on the quality of life for parents. It is also clear that many aspects of a child's life can also be affected. This can include the social, behavioural, cognitive and physical development of the child (Ramchandani, Stein, Evans and O'Connor, 2005). Approximately 61% of children of parents with an affective disorder will go on to develop one or more psychiatric disorders during childhood and adolescence (Silk, Shaw, Skuban, Oland and Kovacs, 2006).

Recent research has not only emphasised the concerns for the parent's mental health, but the need to consider the short and long term consequences for childhood development (Puckering, 2004). Puckering (2004) reported that depressed mothers often exhibit more negative responses toward their babies and as a consequence, this transfers over to their children who learn negative style of interactions. Maternal influences in the early stages of childhood development are crucial, and post natal depression in mothers can affect the quality of how they care for their children. Hostility in depressed mothers can interfere with their ability to display warmth and be consistent, as well as fail to acknowledge their child (Downey and Coyne, 1990).

Ramchandani, Stein, Evans and O'Connor (2005) focused specifically on the affects of paternal depression on children. Investigating behavioural and emotional problems in children aged 3.5 years, the researchers found a strong association between paternal depression and high scores on problem scales (emotional, conduct and hyperactivity). Maternal depression was also associated with an increased risk of high scores on problem scales.

Ramchandani et al (2005) also reported that paternal depression is associated with behaviour problems particularly in boys as this relationship was stronger than in girls. However while the association was also found between maternal depression and high scores on the problem scales, this was irrespective of gender. The authors suggested that boys may be specifically sensitive to the effects of parenting by fathers, potentially because of differential involvement between fathers and their sons.

From their findings, the authors concluded that paternal depression in the early months of a child's life might be a particular risk factor for adverse development. "Depression can compromise the ability of fathers to care responsively for their children and to undertake other roles in the family." (Ramchandani, Stein, Evans and O'Connor, 2005, pg. 2204).

Goodman, Brogen and Lynch (1993) found that children whose mothers and fathers were both depressed had impaired self concepts, were more self critical and had more difficulties with peer relationships. They also had greater adjustment difficulties than children whose mothers alone experienced post natal depression.

Silk et al, (2006) postulated that parental depression may influence child adjustment by disrupting their development of emotion regulation (an adaptive mechanism required for responding to demands and achieving goals). This usually develops during infancy and childhood through interaction with parents and other significant adults. Problems associated with disrupted emotion regulation include poor social competence, depression, anxiety and behavioural problems.

Maladaptive emotion regulation in children can be caused by a number of factors during interaction with their depressed mothers. Depressed mothers can be less responsive to their children's emotional states, less likely to match their children's emotions, and to be more angry, sad and less positive (Silk et al, 2006). Furthermore, due to their own deficits in emotion regulation they may not be able to teach, model or reinforce adaptive strategies for regulating distress. Maladaptive strategies learnt by children can be exhibited by directing attention to the source of distress which can lead to depressive symptoms and problem behaviours, whereas adaptive strategies shift attention away from the stimulus and lower internalising and externalising symptoms (Silk et al, 2006).

Silk et al (2006) concluded that children of depressed mothers utilise less physical comfort, attention refocusing and information gathering, but more passive waiting and focusing than children of mothers who have never been depressed. Their results show that this was the case, especially for daughters of women with depression. These children may be less flexible in shifting attention from a distressing stimulus. This can lead to depression that can be activated by stressors later in childhood or adolescence (Silk et al, 2006). The explanation for daughters being particularly prone to these difficulties may be due to parents facilitating more active and independent strategies in sons, whereas daughters may rely on interactions with their parents and model these.

There is an abundance of research reflecting on how vulnerable children are when parents have mental illness. As the literature has demonstrated, all aspects of

development (social, behavioural, cognitive and physical) can be affected in these children. Accordingly it is important for the community to identify parents who are at risk of developing post natal disorders as it can impact broadly on families and the community.

The Present Study: Aims and Hypotheses

The current study is primarily interested in how fathers prepare themselves for fatherhood and whether this preparation is related to post natal depression. As this factor has never been investigated in this context in the past, the authors developed a questionnaire for the current study. This was designed to measure two factors associated with preparation for fatherhood; the extent that fathers had previously interacted with children prior to experiencing parenting of their own child and the type of information seeking activities they engage in, in relation to parenthood. Although there is limited literature to construct hypotheses about how these factors are related to post natal depression, it is anticipated that actively preparing for fatherhood may aid the transition. It is therefore hypothesised that engaging in these preparatory activities (such as actively seeking information about fatherhood, attending pre natal classes, speaking with other fathers about their experiences) will be related to fewer experiences of post natal depressive symptoms in new fathers. In addition, it is hypothesised that father's exposure to care-giving (such as cleaning, feeding or interacting with children) prior to the birth of their own child, will be related to them having fewer experiences of depression.

Other factors which have previously been investigated due to their association with depression were also considered in this study. In keeping with previous literature, it is expected that there will be a significant negative correlation between social support and post natal depression while father's conviction that they play a primary role in care giving for their new child will be significantly negatively related to post natal depression.

Although age is not consistently found to moderate the impact of post natal depression to the extent of these other factors, its role was still investigated. Fathers who are older will be expected to have more life experience and be more prepared for fatherhood and therefore a significant negative correlation between these factors is expected.

Method

Participants

Thirty-two first time fathers from Southern Tasmania participated in this research. Participants were eligible to participate when their baby was aged between six and twelve weeks old. Participants were excluded from participating in this study if their partner (the mother of their child) had been treated for a psychological disorder within the last two years.

Materials

A number of questionnaires were used in this study to measure the experimental variables.

Edinburgh Post Natal Depression Scale (Cox, Holden and Sagovsky 1987)

The Edinburgh Post Natal Depression Scale (EPDS) (Appendix 1) has been used in previous research to measure post natal depression in males and females (Ballard et al, 1994)

As the Edinburgh Post Natal Depression has also been validated for use with fathers, the cut off scores were specifically developed for males to account for gender differences in symptom severity. Cox et al, (1987) report the cut off score for mothers is 12/13 in cases of major and minor depressive illnesses. Scores can be interpreted in the following way for mothers.

- 0-8 low probability of depression
- 8-12 effects of dealing with a new baby or experiencing baby blues
- 13-14 likely to be experiencing post natal depression
- 15+ high probability of experiencing clinical depression

Matthey et al (2001) acknowledged that males are generally less expressive about their emotions than female, hence a different set of cut off scores are used. It has been recommended that optimum cut off screening values for males is 5/6 when measuring both anxiety and depression. However when just measuring depression, a cutoff score of 9/10 for males is more appropriate.

In the current study, the cutoff scores were not used due to the fact that correlations were used to analyse the current data. Thus, a continuous score was required for these analyses rather than a categorical one. Participants' raw Edinburgh Post Natal

Depression Scale scores were therefore used to correlate with other factors, and to establish the rate of depression experienced by the participants.

General Health Questionnaire 28 (Goldberg, 1972)

The General Health Questionnaire (GHQ) (Goldberg, 1972) (Appendix 2) was also used to measure psychological functioning. Despite its title it is designed to measure mental health. It is widely used as a screening tool for psychiatric caseness (Dudley et al, 2001). The four subscales measure somatic symptoms (GHQ A), anxiety and insomnia (GHQB), social dysfunction (GHQC) and depression (GHQD) (Werneke, Goldberg, Yalcin and Ustun, 2000). Participants rated their feelings between "better than usual" and "much worse than usual" in these aspects of their life in the last few weeks. Because correlations were used as the main method of data analysis, a continuous score was used. The Likert method of scoring (0, 1, 2, 3) was therefore used rather than the traditional (0, 0, 1, 1) General Health Questionnaire scoring system. Goldberg (in Swallow, Lindow, Mason and Hay, 2003) recommends the Likert method in survey work and that cut-off scores of 23/24 are used in determining cases.

The General Health Questionnaire-28 has been used in other studies such as Dudley et al (2001) to investigate post natal depression in fathers. It has been used in the current study to compliment the measurement of depression (and other psychological symptomatology) in new fathers.

Social Support Network Inventory (Flaherty, Gaviria and Pathak, 1981)

The Social Support Network Inventory (SSNI) (Flaherty et al, 1981) is a reliable instrument used to measure social support in patients and the general population. The inventory has 11 items (Appendix 3). Participants listed people or groups of people who they are closest to, and who provide support. From this they chose their four closest friend/family member and one group. They then rated the level of support they provide to, and receive from, them.

Social Adjustment Scale – Self Report (Weissman and Bothwell, 1976)

The Social Adjustment Scale – Self Report is a measure for social functioning at work, home or as a student, in social and leisure activities, in relationships with family, as a spouse and parent, and in the role within the family unit. Each question is rated on a five point scale with higher scores indicating more social adjustment problems. Scores are then averaged and converted into t-scores.

In the Social Adjustment Scale manual (Weismann, 1999) it is recommended that t-scores (SASt) are interpreted in the following way.

- 70+ Marked atypical (indicates significant problem)
- 66-70 Moderately atypical (indicates significant problem)
- 61-65 Mildly atypical (possible significant problem)
- 56-60 Slightly atypical (borderline: possible concern)
- 45-55 Average (typical score: no concern)
- 40-44 Slightly atypical (low scores are desirable: no concern)
- 35-39 Mildly atypical (low scores are desirable: no concern)
- <34 Moderately atypical (low scores are desirable: no concern)

The questionnaire can be used for a variety of populations including acute inpatients and recovering outpatients, schizophrenics and alcoholics as well as non patient populations. It also has a wide range of applicability from determining social problems to assisting in treatment planning.

Role of the Father Questionnaire (RoFQ) (Palkovitz, 1984)

The RoFQ measures the extent that a parent believes the father's role is important to child development. It contains 15 items which are rated on a five point scale between disagree strongly to agree strongly (Appendix 4) Scores range from 15-75 with higher scores reflecting attitudes that fathers play an important and sensitive role with their children.

Exposure Interview for New Fathers

This measure was developed by the authors to identify the extent to which fathers have been exposed to playing a role in caring for children, as well as preparing for fatherhood by accessing parenting information. Although these factors have not been measured in this context in the past, the current research was interested in whether they are related to fathers experiencing symptoms of depression following the birth of their first child. The questionnaire was developed as a quantitative measure, but allows for some qualitative explanation. It contains 12 items and takes about 5 minutes to complete (Appendix 5) The main factors measured by this questionnaire were previous experience with children, and preparation for fatherhood. Using a 5-point likert scale (where 1 = no experience, 3 = a little experience and 5 = a lot of experience) fathers indicated the degree to which they have previous *experience* of

spending time with children, and more specifically the degree to which they had *responsibility washing, changing or feeding young children* (wash/feed) and *reading, playing or caring for young children* (read/play). Father's responses on these three items were summed to produce a total score out of fifteen. This total score was used to measure previous exposure to parenting overall (ExpTotal).

Another set of questions requiring a yes/no answer were used to measure preparation for fatherhood. These included questions about whether the *birth of the baby was planned* (BirthPlan), whether fathers *attended prenatal classes* (Prenatal), and whether the fathers actively *sought information or read pamphlets/books about fatherhood* (SeekInfo). An overall *preparation* score (Prep) was then developed by assigning scores to the responses (no = 0, yes = 1) and summing these.

In the development phase originally 15 items were used, however the questionnaire was reviewed by five fathers within postgraduate psychology courses at the University of Tasmania (three were new fathers). Three of the items were then removed to allow the questionnaire to be administered in a shorter period of time and because the reviewers did not feel that the questions added to identifying exposure to factors relevant to fatherhood. Furthermore, three of the items were changed to make use of the 5-point likert scale. This allowed the questions to be answered in a quantitative manner as it reduced the level of explanation required to respond.

Procedure

In order to access new fathers who were potential participants for this research, a request for assistance from the Department of Health and Human Services (Family, Child and Youth Health Services; FCYH) was approved. Consultation between the investigator and various managers within Family Child and Youth Health services in the south occurred and the investigator was able to meet with groups of child health nurses who conduct regular checkups with newborn babies and their parents. It was agreed that nurses would distribute pamphlets (Appendix 6) provided by the investigator, to potential participants explaining the research and establishing whether they were interested in completing the six questionnaires.

The child health nurses then provided the investigator with names and contact details of fathers who expressed their interest. The investigator then contacted the participants to arrange a convenient time to complete the questionnaires. The program coordinator of a father's group at Good Beginnings was also provided with the pamphlets to distribute to fathers at meetings.

When it became evident that there was a lack of interest within the community to participate, a number of other methods were used to attempt to recruit new fathers. The Mercury newspaper ran a story which generated some interest, but many potential participants were ineligible because they were either fathers of multiple children (and this would negate the research as fathers with children would already have experience with children) or their newborn babies were outside the age range for the current research. Attempts to recruit participants through the southern and northern public hospitals also occurred. While the clinical nurse consultant for

maternity services at the Royal Hobart Hospital cooperated and distributed the pamphlets and displayed posters, it was more difficult to get cooperation from other hospitals due to geographical issues.

Those participants who were eligible were contacted when their babies were aged between 6-12 weeks old. Ramchandani et al (2005) reveals that the period 6-12 weeks is often used in the assessment of postnatal depression. The investigator contacted the participants to arrange a convenient time to meet with them and they were provided with an information sheet (Appendix 7) so that consent could be provided (Appendix 8). Approximately forty minutes of their time was required to complete the six questionnaires.

Data Analysis

Correlations were conducted to investigate relationships between all the factors and in particular identify the relationship between experience caring for children, preparation for fatherhood and the experience of postnatal depression. Due to the small sample size, there was difficulty in producing groups and comparing fathers with high post natal depression scores with those with low post natal depression scores.

Results

Demographics

Thirty two new fathers participated in this research and completed each of the six questionnaires. The fathers ranged in age from 24 to 43 years with the mean age being 31.9 years. In the current research, the mean age of babies whose fathers' were interviewed was 9.03 weeks.

All fathers interviewed were either married or in a defacto relationship. One exception involved a couple who had recently separated and were living in separate residences. However, both attended the session together with their baby as they also had an appointment with the child health nurse. In terms of employment status, 90.6% of the fathers reported being employed full time, 6.25% reported being employed part time, and 3.12% reported being employed casually.

Using the Edinburgh Post Natal Depression Scale four (12.5%) of the participants in the current research reported that they were experiencing symptoms at or above the cut off scores recommended by Cox et al (1987).

Table 1

Means and standard deviations of father's scores on General Health Questionnaire

Subscale	Mean	Standard Deviation
GHQ A (Somatic)	4.16	2.95
GHQB (Anxiety/Insomnia)	3.72	2.77
GHQC (Socialisation)	6.25	2.08
GHQD (Depression)	0.47	1.39
GHQTot (Total of Subscales)	14.59	6.92

Using the General Health Questionnaire-28 cutoff scores recommended by Goldberg (in Swallow et al, 2003), four fathers were also identified for psychiatric caseness. However of these, only two were also identified by the Edinburgh Post Natal Depression Scale. This indicates that four fathers reached the cutoff for post natal depression while six were experiencing psychological distress overall. This equates

to 18.75% of participants in the current study experiencing psychological distress. Table 1 depicts the means and standard deviations of each subscale. While the mean depression score (GHQD) for fathers was low, this may be a skewed result due to the majority of the fathers reporting scores of zero on the depression subscale while those who did report symptoms were unable to affect this skew.

A number of correlation analyses were conducted in order to examine the relationships between post natal depression and preparation for fatherhood, previous interaction with children, social support, social adjustment, as well as perception of the role of the father. For the purpose of the current research, the data was analysed using the Pearson product-moment correlation coefficient.

The correlation analysis revealed there was no relationship between age and post natal depression scores ($r = -0.09$, $p = 0.62$) (See Table 2). Furthermore, there was no relationship between age and GHQTot scores ($r = 0.05$, $p = 0.78$) (Table 2). The General Health Questionnaire was also used to measure mental health.

Table 2
Matrix of correlation analyses between factors Age, EPDS, GHQ, ROFQ, SASt and SSNI scores with Experience and Preparation scores

Factor	Age	EPDS	GHQA	GHQB	GHQC	GHQD	GHQTot	ROFQ	SASt	SSNI
Age	-									
EPDS	-.09	-								
GHQA	0.30	0.16	-							
GHQB	0.05	0.53**	0.46**	-						
GHQC	0.24	0.16	0.37*	0.67**	-					
GHQD	-0.28	0.32	-0.09	0.36*	0.05	-				
GHQTot	0.05	0.55**	0.60**	0.75**	0.52**	0.32	-			
ROFQ	0.29	-0.11	-0.11	-0.01	0.21	-0.07	-0.33	-		
SASt	-0.05	0.60**	-0.01	0.35*	0.28	0.04*	0.56**	-0.16	-	
SSNI	0.29	-0.16	-0.03	-0.05	0.08	-0.15	-0.16	0.41*	-0.26	-
Experience	0.15	-0.16	-0.12	-0.27	0.06	-0.17	-0.39*	0.31	-0.05	0.05
Wash/Feed	-0.11	0.13	-0.12	-0.21	-0.16	-0.10	-0.28	0.27	-0.01	-0.17
Read/Play	0.26	-0.03	-0.19	-0.17	0.01	-0.07	-0.34	0.38*	-0.13	0.10
ExpTotal	0.13	-0.04	-0.16	-0.25	-0.02	-0.13	-0.38*	0.36*	-0.07	0.01
BirthPlan	0.29	-0.24	-0.30	-0.22	.012	-0.42*	-0.25	0.35*	-0.23	0.09
Prenatal	0.18	0.08	0.17	0.16	0.11	0..06	0.02	0.14	-0.09	0.08
SeekInfo	0.11	-0.19	0.01	-0.34	-0.05	-0.27	-0.31	0.27	-0.01	0.16
Prep	0.23	-0.17	0.05	-0.21	0.06	-0.29	-0.26	0.33	-0.13	0.14

Note. Pearson Correlations (Sig. 2-tailed) used. * denotes correlations with significance levels <.05 and ** denotes <.01. EPDS=Edinburgh Post Natal Depression Scale; GHQ=General Health Questionnaire; ROFQ=Rolfe of Father Questionnaire; SASt=Social Adjustment Scale; SSNI=Social Support Network Inventory.

Table 3
Matrix of correlation analyses between factors Age, EPDS, GHQA, GHQB, GHQC, GHQD, GHQTotal, ROFQ, SASt scores and SSNI

Factor	Experience	Wash/Feed	Read/Play	ExpTotal	BirthPlan	Prenatal	SeekInfo	Prep
Age	0.15	-0.11	0.26	0.13	0.29	0.18	0.11	0.23
EPDS	-0.16	0.13	-0.03	-0.04	-0.24	0.08	-0.19	-0.17
GHQA	-0.12	-0.12	-0.19	-0.16	-0.03	0.17	0.01	0.05
GHQB	-0.27	-0.21	-0.17	-0.25	-0.22	0.16	-0.34*	-0.21
GHQC	0.06	-0.16	0.01	-0.02	0.12	0.11	-0.05	0.06
GHQD	-0.17	-0.10	-0.08	-0.13	-0.42*	0.06	-0.27	-0.29
GHQTot	-0.39*	-0.28	-0.34	-0.38*	-0.25	0.02	-0.31	-0.26
ROFQ	0.31	0.27	0.38*	0.36*	0.35*	0.14	0.27	0.33
SASt	-0.05	-0.01	-0.13	-0.08	-0.23	-0.09	-0.01	-0.13
SSNI	0.05	-0.17	0.10	0.01	0.09	0.08	0.16	0.14
Experience	-	0.69**	0.73**	0.92**	0.34	0.26	0.56**	0.51**
Wash/Feed	0.69**	-	0.65**	0.85**	0.24	0.18	0.34	0.33
Read/Play	0.73**	0.65**	-	0.89**	0.33	0.39*	0.32	0.43*
ExpTotal	0.92**	0.85**	0.89**	-	0.35	0.32	0.47**	0.49**
BirthPlan	0.34	0.24	0.33	0.35	-	0.45**	0.45**	0.78**
Prenatal	0.26	0.18	0.39*	0.32	0.45*	-	0.48**	0.75**
SeekInfo	0.56**	0.34	0.32	0.47**	0.45*	0.48**	-	0.85**
Prep	0.51**	0.33	0.43*	0.49**	0.78**	0.75**	0.85**	-

Note. Pearson Correlations (Sig. 2-tailed) used. * denotes correlations with significance levels <.05 and ** denotes <.01
EPDS=Edinburgh Post Natal Depression Scale; GHQ=General Health Questionnaire; ROFQ=Role of Father Questionnaire; SASt=Social Adjustment Scale; SSNI=Social Support Network Inventory.

Relationship between the Edinburgh Post Natal Depression Scale and the General Health Questionnaire (28) scores

The General Health Questionnaire is also a measure of mental health which measures similar aspects of functioning as the Edinburgh Post Natal Depression Scale, a correlation analysis was conducted to compare the relationship between father's responses on the two scales.

As illustrated in Table 2, there was a positive correlation between EPDS scores and the GHQB ($r = 0.53$, $p < 0.01$). Furthermore, EPDS scores were positively correlated with GHQTot scores ($r = 0.55$, $p < 0.01$). Although the GHQD subscale did not significantly correlate with EPDS scores, there was a positive trend ($r = 0.32$, $p = 0.07$). Due to the fact this study has identified a relationship between the General Health Questionnaire and Edinburgh Post Natal Depression Scale, both scales were used to identify relationships between the factors investigated in this study.

Relationship between Previous Experience with Children and Post Natal Depression

One of the main aims of the current research was to determine whether there was a relationship between fathers' previous experience caring for children (such as reading or playing with children, or washing and feeding children) and their developing symptoms of post natal depression. The following tables report the number of fathers reporting their level of previous experience engaging with children on a 5 point Likert scale. Table 4 reveals the frequency of father's indicating they had none (1), a little (3) or a lot of experience (5) with children. As can be seen, 15.63% revealed they had no experience previously caring for children, 50.01% of fathers revealed they had a

little experience, while 34.38% revealed they had a little to a lot of previous experience with children.

Table 4
Frequency of Participant's Experience with Children

Scores	Frequency	Percentage	Cumulative Percentage (%)
1.0-1.5	5	15.63	15.63
2.0-2.5	5	15.63	31.25
3.0-3.5	11	34.38	65.63
4.0-4.5	8	25.00	90.63
5.0	3	9.38	100.00

Meanwhile, Table 5 presents the number of fathers reporting they had specific experience in washing and feeding (wash/feed) children.

Table 5
Frequency of Participant's Wash/Feed Experience with Children

Scores	Frequency	Percentage	Cumulative Percentage (%)
1.0-1.5	24	75.00	75.00
2.0-2.5	3	9.38	84.38
3.0-3.5	5	15.63	100.00
4.0-4.5	0	0.00	100.00
5.0	0	0.00	100.00

In terms of washing and feeding other people's children, 75% of the fathers in the current study reported having no experience while 25% had a little experience.

Finally, Table 6 presents the number of fathers reporting they had previous experience in reading/playing (read/play) with children.

Table 6
Frequency of Participant's Read/Play Experience with Children

Scores	Frequency	Percentage	Cumulative Percentage (%)
1.0-1.5	10	31.25	31.25
2.0-2.5	8	25.00	56.25
3.0-3.5	9	28.13	84.38
4.0-4.5	5	15.63	100.00
5.0	0	0.00	100.00

In this case, 31.25% of fathers indicated they had no previous experience reading and playing (read/play) with other people's children, while 53.13% had a little. A further 15.63% reported a little to a lot of experience. Figure 1 illustrates this breakdown in father's responses for each category of experience used to measure level of experience with children.

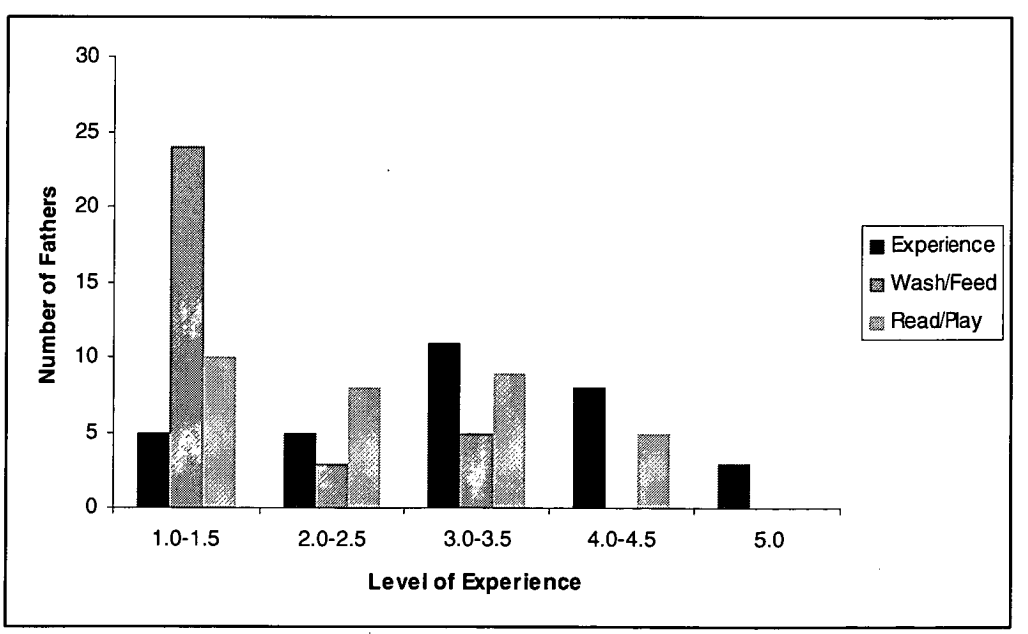

Figure 1. Number of fathers indicating they had no experience (1), a little experience (3) and a lot of experience (5) with wash/feed, read/play experience and experience in general on the Exposure Interview for New Fathers.

Figure 1 illustrates that fathers reported having different degrees of experience in general with the majority reporting a little. However, in terms of their level of experience with wash/ feed, three quarters of the fathers in this study indicated having no experience and the remainder only had a little experience. Furthermore, in terms of read/play with children, fathers in the current study were distributed across each of the levels of experience ranging from none, to a little, to a lot of experience.

Father's Edinburgh Post Natal Depression Scale scores failed to correlate with previous experience with children. The correlation analysis failed to identify a relationship with either experience, read/play, wash/feed or ExpTot. Despite this, father's GHQtot scores did correlate significantly with previous experience with children. Table 2 illustrates a negative correlation between GHQTot scores and experience ($r = -0.39$, $p < 0.05$). Furthermore, a negative correlation was identified with ExpTot scores ($r = -0.38$, $p<0.05$). Although there was no relationship with the wash/feed subscale, there was a pattern emerging between GHQTot scores and the read/play subscale ($r = -0.34$, $p=0.06$).

Relationship between Preparation for Fatherhood and Post Natal Depression

The current research also aimed to investigate how fathers prepared for fatherhood and how this was related to post natal depression. As previously mentioned, the factors in the current research which were used to establish whether fathers had prepared for fatherhood included; attending prenatal classes (Prenatal), planning the birth (BirthPlan), and seeking information (SeekInfo) about fatherhood. These items were merged to produce an overall preparation score (Prep). Table 2 reveals that

while there was no relationship between any aspect of prenatal preparation and Edinburgh Post Natal Depression Scale scores, there was a relationship with General Health Questionnaire scores. Fathers GHQD scores were significantly negatively correlated with BirthPlan ($r = -0.42$, $p<0.05$). Furthermore, a significant correlation was found between scores on the GHQB subscale and SeekInfo ($r = -0.34$, $p = 0.05$). These results indicate that fathers who reported that they and their partner had planned the birth of their child, reported feeling less depressed following the birth of their baby. Furthermore, fathers who were more likely to engage in reading information from books, pamphlets, and the internet about pregnancy and fatherhood reported feeling less anxious or having difficulty sleeping following the birth of their baby.

Although the relationship was not significant, a trend was also apparent between SeekInfo and GHQTot scores where ($r = -0.25$, $p = 0.08$) (Table 3). Furthermore, there did not appear to be any relationship between General Health Questionnaire and fathers reporting they had attended prenatal classes with their partner. Interestingly a majority of fathers appeared to attend prenatal classes with 90.6% reporting they had.

Effect of father's role expectations on post natal depression and its relationship with social support and previous experience with children

The role of the father questionnaire (ROFQ) was designed to measure the participant's expectations of their role as a father and how they felt that their involvement impacted on the development of their child. Table 7 illustrates the range of responses fathers reported on the ROFQ.

Table 7

Participant's Role of the Father Questionnaire Scores

ROFQ scores	Frequency	Percentage (%)	Cumulative Percentage (%)
49	1	3.13	3.13
54	1	3.13	6.25
55	1	3.13	9.38
58	2	6.25	15.63
59	1	3.13	18.75
61	4	12.50	31.25
62	2	6.25	37.50
63	1	3.13	40.63
64	4	12.50	53.13
65	3	9.38	62.50
66	1	3.13	65.63
67	2	6.25	71.88
68	3	9.38	81.25
69	2	6.25	87.50
70	1	3.13	90.63
75	3	9.38	100.00

As the table presents, fathers did not score less than 49 which on this scale is above the middle possible score of 45, and this indicates that overall fathers tended to have the belief that fathers do play an important role in parenting their child. This was further emphasized by the fact that the mean score on the ROFQ was 4.19 (SD = 3.31) which corresponds to fathers responding that they agreed moderately that their responsiveness and involvement with their child makes a difference in the child's development. The table also indicates that three fathers scored the highest score of 75 which indicates they agreed strongly about the importance of their role as a father.

While the ROFQ scores did not appear to have a significant relationship with EPDS scores in the current study, there was a trend emerging with GHQTot Scores ($r = -0.33$, $p = 0.06$). This indicates that fathers who had lower GHQTot scores tended to be more likely to be of the opinion that their role as a parent is an important one.

ROFQ scores did however, significantly correlate with social support. Participant's scores on the ROFQ were significantly correlated with their social support network ($r = 0.41$, $p < 0.05$).

Another factor which was related to the role of the father was previous experience with care-giving for children. Table 2 also demonstrates that ROFQ scores were significantly correlated with previously reading and playing with children (read/play) ($r = 0.38$, $p<0.05$), and with total experience with children (ExpTot) ($r = 0.36$, $p<0.05$).

Although father's perceptions of their role as a father were not significantly related to their overall preparation (Prep) for fatherhood, there was a significant relationship with BirthPlan. In this case a positive correlation was found ($r= 0.35$, $p<0.05$).

Surprisingly, social support (SSNI) scores did not correlate significantly with depression. This may be explained in part by the fact that a majority of participants (87.5%) reported their spouse/partner as their primary support, followed by 12.5% naming their parents as their primary support.

Relationship between Social Adjustment and Depression

The SAS-SR is used in research to identify how participants social functioning adjusts following a major life event; in this case the birth of a child. Table 8 displays the number of fathers for each category of SASt- scores defined by Weissman (1999). Table 8 indicates that the majority of father's SASt- scores fell within the 45-55 category. Approximately 65.6% of fathers were identified as having average (no

concern) SASt-scores. A further 9.4% of fathers had below average SASt-scores but still exhibited desirable levels of adjustment. However, 25% of the fathers were identified as having a possible significant problem (mildly atypical) to significant problem (moderately atypical).

Table 8

Participant's Social Adjustment Scale SASt-Scores

SAS-SR t-scores	Frequency	Percentage (%)	Cumulative Percentage (%)
35-39	2	6.3	6.3
40-44	1	3.1	9.4
45-55	21	65.6	75.0
56-60	0	0.0	75.0
61-65	4	12.5	87.5
66-70	4	12.5	100.0

As is shown in Figure 2 the results appear to display a relatively normal distribution of SASt-scores with a small number of fathers identified as below average and the majority of fathers falling within the average range. However, the data also demonstrates that a quarter of fathers were experiencing difficulties in social adjustment since the birth of their babies, with 25% of the fathers identified as experiencing problems.

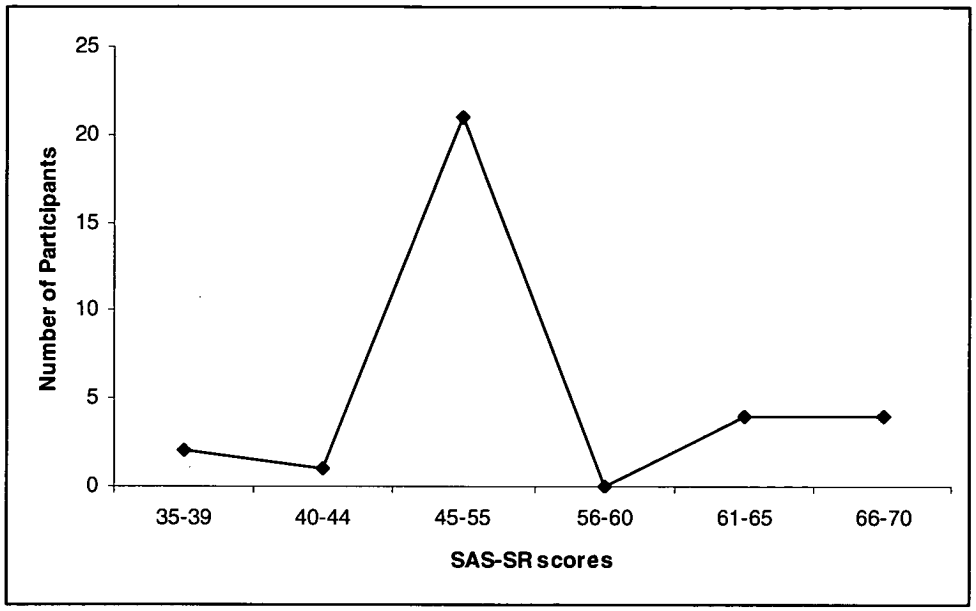

Figure 2 Father's Social Adustment Scale SASt scores for each category, as defined by Weissman (1999)

Social adjustment was another factor which correlated with depression in the current results. Fathers with higher EPDS scores also indicated higher SASt-scores (maladjustment) ($r = 0.60$, $p < 0.01$). Furthermore, SASt-scores also correlated significantly with General Health Questionnaire scores. The GHQB scores were significantly correlated with social maladjustment ($r = 0.35$, $p = 0.05$). However, there was a stronger positive relationship between SASt scores and the GHQD and GHQtot subscales ($r = 0.37$, $p < 0.05$ and $r = 0.56$, $p < 0.01$ respectively).

In summary, a number of significant relationships, pertinent to the aims of this study were found in the current results. While there was no previous research to base the hypotheses on, the current study was correct in anticipating a relationship between depressive symptoms in new fathers and their previous experience with children. A negative significant correlation was found between father's scores on the General Health Questionnaire and ExpTot scores while a negative trend was also found with

the read/play aspect of experience with children. Furthermore, in keeping with the reported hypotheses of this study, a relationship was also reported between depression and father's preparation for fatherhood. GHQD scores were negatively significantly correlated with father's reports that they had prepared for the birth of their baby (Birth/Plan). Moreover, father's GHQB scores were also negatively significantly correlated with father's reports that they had sought information about parenthood (SeekInfo). The hypothesis that a negative relationship between depression and a father's attitude that they play an important role in child rearing (ROFQ) was also supported by the current results. In keeping with previous literature, age of fathers in the current study was not significantly related to their reports of depressive symptoms. The implications of these results will now be discussed.

Discussion

Post natal depression is an affective disorder that like depression at other times in life, does not discriminate due to age, socio-economic status, or culture. More recently, with an increased interest in the literature, post natal depression has also been found to affect males, despite it traditionally being associated with motherhood due to the implication of hormonal changes that is apparent in post natal blues (McBride and Rane, 1997).

A number of risk factors have been associated with increased vulnerability in mother's developing depression following the birth of a child. These include; previous experiences of depression (especially previous post natal depression), family history of depression (O'Hara, 1987), depression during pregnancy, marital disharmony (Dudley et al, 2001) Kumar and Robson, 1984) and poor social support (Areias et al, 1996; O'Hara, 1987). These risk factors can also be applied to fathers (Ballard et al, 1994; Corter and Fleming, 1995). Other factors which are known to contribute to father's experiencing post natal affective symptoms include; their partner having post natal depression (Harvey and McGrath, 1988; Lovestone and Kumar, 1993; Zelkowitz and Milet, 2001), added pressure at work and from extended family (Harvey and McGrath, 1988), and difficulty making the transition to fatherhood (McBride and Rane, 1997; Wente and Crockenberg, 1976). This latter point is important in the current research.

The discussion regarding the existence of post natal depression has become a debated issue, and this is demonstrated by the fact that post natal depression is not a separate diagnosable condition according to the DSM-IV-TR. Some literature has not found consistent evidence to make a clear assumption that depression in fathers during the post natal period can be differentiated from depression at other times (Atkinson and Rickel, 1984; Kendall et al, 1976). However, other literature proposes post natal depression is a distinct condition. At various times throughout history researchers have found that 2-4% of young males are expected to experience depression (Robins et al, 1984). This is in contrast to the 10% of fathers at 6 weeks reported by Ballard, et al (1994). The literature reports that approximately 5-10% of fathers experience symptoms of post natal depression (Ballard et al, 1994) following the birth of their child.

The current results are slightly elevated than this with 12.5% of the current participants reporting on the Edinburgh Post Natal Depression Scale they were experiencing symptoms indicative of post natal depression. A further four fathers reported psychological distress on the General Health Questionnaire with two of these fathers overlapping with the Edinburgh Post Natal Depression Scale. This indicates that six (18.75%) fathers overall experienced some psychological distress. While it is purely speculative, a number of reasons may be attributed to the elevated rates in this study, both methodological and demographic. It could be that the fact that two measures of depression were used in this study. Of the previous research conducted it appears that a single measure was used to measure depression in fathers. As examples Ballard et al, 1994 used the EPDS only. Perhaps using two measures identified depressive symptoms in fathers which would not have otherwise been identified, and

combined these resulted in an elevated number. However, Dudley et al, 2001 did use three measures including the GHQ and EPDS. Unfortunately a different version and scoring system of the scale was used compared to in the current study. It could also be speculated that fathers involved in the study may have had a vested interest in the research topic, for a variety of reasons including previously experiencing depression themselves (prior to the birth of their child). It should also be noted that 90.6% of fathers in this study were employed full time. Due to this it could be assumed that the fathers in this study therefore had less time to cope with the demands of full time work while finding the time to bond with or adjust to a new baby. The participants also appeared to be highly educated which may be a difference between this study and others which may have had a sample from the general population. These participants therefore, may have been more aware of the symptoms they experience and able to reflect this on the questionnaires. Without further research in this area these conclusions will remain speculation.

While the Edinburgh Post Natal Depression Scale (EPDS) was specifically designed to measure post natal depression in females, the General Health Questionnaire-28 is a survey measure and has been used in previous research into post natal depression (Dudley et al, 2001). In the current study, the General Health Questionnaire depression and anxiety/insomnia (GHQB) subscales significantly correlated with the EPDS. While it was not the aim of this study to compare the validity or case sensitivity of these scales, it is likely the EPDS scores correlate with the anxiety/insomnia and depression subscales of the General Health Questionnaire (GHQB and D), due to the fact they are factors also measured by the EPDS. A comparison of the items on the EPDS and GHQ reveal that items of anxiety/insomnia

and depression are primarily included in the EPDS whereas somatic and socialisation items are not included.

In the study by Dudley et al (2001), a comparison is made between fathers' scores on the GHQ and those of fathers in the general population. Unfortunately a comparison of results from the current participants and the general population reported by Dudley et al (2001) was not possible due to the scoring system and version of the GHQ being different as just mentioned.

Benefit of Previous Experience Interacting with Children

The current investigation was primarily focused on the level of experience fathers had caring for children prior to the arrival of their own child and whether this impacted on depression. Activities which were used to measure such experience included; playing with or reading to children, washing or feeding children and the general perception they had previously been involved in care giving of other people's children. These factors were analysed against the father's reports of depression on the EPDS and GHQ-28). As mentioned in the results, father's responses on the EPDS failed to correlate significantly with previous experience with children. However, just as hypothesised that father's depression would be related to experience with children, a significant relationship was found between experience with children and father's scores on the GHQ -28. As the results indicate, GHQTot scores negatively correlated with Experience and ExpTot. From this it could be interpreted that fathers who had some involvement with children prior to their own child being born were less likely to report feeling psychological distress (social, physical, depression, anxiety/insomnia)

following the arrival of their child than fathers who did not perceive they had experience with children.

While this relationship was not evident in father's responses about specific activities they engaged in (such as reading/playing or washing/feeding), it was apparent in their overall perception of experience. Perhaps fathers were reflecting on other activities they usually engage in such as taking a nephew shopping, playing sport or going camping with them, which were not specifically referred to in the questionnaire. It may also have been that fathers were not discriminating washing/feeding or reading/playing as activities they engage in when reflecting on experience in general.

Looking at father's responses in relation to their perceived level of experience with children also illustrates the types of activities they are more likely to engage in. A majority of fathers (75%) reported they had no experience at all in washing or feeding (wash/feed) children prior to the birth of their own child and approximately only 25% reported having a little. Meanwhile, 31.25% of fathers reported having no experience in reading/playing (read/play) with children, 53.13% had a little experience, and 15.63% reported a lot of experience. Perhaps fathers were equating experience in general with reading and playing as these are tasks which are primarily expected of people when they babysit other people's children. In contrast, the majority of fathers identified specifically that they did not have experience washing and feeding children which are more demanding tasks.

Being involved with children throughout life may be an important factor as it differentiates men from each other. Many, but not all, women often show a natural

interest in nurturing children and engage in activities or health related careers which expose them to children. As the literature has acknowledged, traditionally men have not been encouraged to nurture, and while it is becoming more accepted that men can also share a natural appeal to being around children, it is still not considered masculine for men to "gush" over other people's children. Dudley et al (2001) acknowledged that men often have less experience in children rearing and caring for children than their partners. It may be a lifestyle or cultural factor which determines this. Some men grow up in large families where this is normal and they are used to having younger siblings, and nieces and nephews around, whereas others who come from smaller families may not be exposed to this. Furthermore, men are not usually involved in babysitting or taking classes which are focused on child development (Colman and Colman, 1971). Perhaps this attitude towards children and parenting is something which is shaped early on by our parents and extended family, and influences the level to which we interact with children.

Role Expectations of the Father and Social Support

Interestingly, in the current study, a significant relationship was also found between father's expectations of their role as a father and their previous experience with children. ROFQ scores were significantly correlated with previously read/play, specifically, and more generally in perceived experience with children. Although causality cannot be assumed, the current results demonstrate that fathers in the current study who believed that they play an important and sensitive role in parenting also reported higher levels of engaging in reading and playing with children prior to having children themselves. This appears consistent with previous reports by McBride and Rane (1997) that men with more favourable attitudes toward parenting

are usually more involved in child rearing than those with less favourable attitudes. Perhaps these attitudes also contributed to fathers in the current study interacting with children throughout their lives.

Unlike previous research (Harvey and McGrath, 1988; O'Hara, 1987), the current results failed to find a relationship between depression and social support. This may be explained by the fact that fathers participating in the current study reported high levels of social support anyway. This may explain why 87.5% of fathers in the current study selected their spouse as their main social support and the remaining 12.5% named a parent as their primary support.

A significant relationship was however found between social support and the role of the father. Fathers who reported reciprocal support from family and friends indicated they play an important role with providing care for their children. This may be a result of fathers feeling they are supported by their partners and family and they are therefore happier and confident to share the role of care giving as it is a journey they can embark on together. Whereas, fathers who feel unsupported may receive negative feedback and therefore may perceive their role as less important, and be more likely to invest their time in other tasks outside care giving (such as their employment). This appears to be in keeping with the findings of Palkowitz (1984) that spousal support plays a major role in predicting paternal behaviour towards their children. In the current study, maternal support may have been crucial for participants perceiving that their role as a father was an important one in the family dynamic, and they are supported in their role as a father.

It is important not only for men to feel comfortable with their role as a father but also that their partners have faith in them and encourage their role as a father. Support for the father in fostering a relationship with his child and providing care for the child, comes from the partner and is necessary for encouraging this role. The traditional role is for the father to be the financial provider while the mother is the primary caregiver. Palkowitz (1984) reported that lack of support for new fathers in their role as father, can entrench the mother as the primary carer of the child. However with changing roles of mothers working soon after the birth and fathers having to juggle work with child care, the importance of inclusion and working together is required to reduce the impact on fathers. Unfortunately this has been met with some anxiety and confusion for fathers who now view their role as just as important (LaRossa, 1988) which emphasises further the importance of support from their partners.

This role confusion and changes in lifestyle and routine is what Hickie (Beyond Blue, 2004) reported impacts on the father's transition to fatherhood and their coping mechanism which can in turn lead to experiences of depression (McBride and Rane, 1997; Wente and Crockenberg, 1976). In the current study, a significant relationship was found between role of the father and depression. While this relationship was not significant for EPDS scores it was apparent with General Health Questionnaire-28 scores. A negative relationship was found between the two factors indicating that fathers were more likely to experience psychological distress if they were of the opinion that fathers do not play an important role in caring for their children or that their involvement impacts on their child.

Preparing for the Transition to Fatherhood

Another focus of the current study was how fathers prepare themselves for the impending birth of their child and the transition to fatherhood. While preparation was not related to EPDS scores, it was negatively correlated with GHQ scores. The current results indicate that fathers who reported that they and their partner had planned the birth of their child, felt less depressed following the birth of their baby than those who had not planned the birth. Furthermore, fathers who were more likely to engage in reading information from books, pamphlets, and the internet about pregnancy and fatherhood, reported feeling less anxious or having insomnia (due to worry) following the birth of their baby than fathers who had not accessed this information. Fathers don't always have the same opportunities to attend medical appointments like women do, so they don't have the same chance to learn through medical practitioners (during the pregnancy) or child health nurses (following the birth) or have the same opportunity to bond and learn about their child along the way. This is consistent with Cronenwett and Kunst-Wilson (in Ballard and Davis, 1996) who reported that while fathers may be expected to play a larger role in parenting, this has not necessarily been accompanied by appropriate preparation and fathers have less time to prepare for parenting than mothers. Furthermore, Colman and Colman (1971) report that in general men have no formal training for fatherhood. In addition, women are more likely to be passed on important information from friends and family about what to expect about parenthood (Cronenwett and Kunst-Wilson in Ballard and Davis, 1996), child development and the common feelings and thoughts they may experience following child birth. Unless men attend father's groups, which engage men with one another to impart knowledge about the expectations of fatherhood or unless they seek

this information themselves, there is the possibility they may learn little before their baby is born.

Another activity considered to be part of preparation for fatherhood was attending prenatal classes. The fact there was no relationship between depression and attending prenatal classes may be attributed to the fact that 29 fathers (90.6%) reported that they had attended prenatal classes with their partners during the pregnancy. Prenatal classes appear to be linked with all hospitals (private and public) in southern Tasmania and due to this it is part of the process to attend. Attending classes with their partners was important for the majority of fathers in this study.

Social adjustment is an important factor following any major life event. The social adjustment scale was used to identify how fathers social functioning adjusted following the birth of their child. Twenty-five percent of fathers were identified as having a significant problem with social adjustment and this was one factor which did correlate significantly with depression in the current results. Fathers with higher Edinburgh Post Natal Depression Scale and General Health Questionnaire scores also indicated higher social adjustment scores (maladjustment). More specifically the General Health Questionnaire anxiety and depression subscales correlated positively. This indicates that fathers with higher levels of depression and anxiety symptoms were more likely to have poorer social adjustment.

Impact of Age

As was expected, paternal age was not related to post natal depression for the current participants. This is consistent with previous research which reveals that age is not a

factor which increases risk in males for post natal depression nor is maternal age for women (Ballard et al, 1994; O'Hara, 1987). Age should not be disregarded as a factor impacting on post natal depression in males on the basis of these results. As Ballard et al (1994) acknowledged, males over 30 years do tend to have lower levels of post natal depression and this is probably attributed to their experience and maturity. In the current study, fathers tended to be older with an average age of 31.9 years, and at an age when men and their partners are usually considering fatherhood. Australians are delaying parenthood due to lifestyle choices, financial reasons, career and employment, health, fragility of relationships and dislike of children. The current age range of fathers is in keeping with national averages which rose from 30.1 years in 1985 to 32.9 years in 2005 (The Australian Bureau of Statistics, 2005).

Limitations of the Current Research

Unfortunately a thorough comparison of age, or other factors, was unable to be conducted as the fathers in the current study may not have been as representative of the general population as would have been liked, due to lack of interest from younger fathers. While attempts were made to recruit participants from the general population the study was dependent upon men showing an interest in the study and the value of research. One observation which was made by the investigator was that the stigma associated with depression meant people denied ever experiencing symptoms and did not want to be associated with being involved in such research. As an example of this, when males in the community were asked to volunteer to be in the background of a photograph for the Mercury article, they either avoided the picture when they heard it was related to post natal depression or wanted to express that they would go in the picture but that they didn't have it. More participants would have allowed for

identifying the attitudes towards parenting, preparation, exposure to children, social support and how this compared in fathers with and without depression.

It was also clear from the onset of interviewing fathers that they had a higher SES due to the primary method in which fathers were accessed in the community. As the study relied on fathers coming forward, showing interest in the research and taking time to participate, it may be suggested that they were higher educated and appreciated the benefit of research. Furthermore, it is worth noting that the majority of fathers (90.6%) indicated they were employed full time, with only 9.4% reporting they were employed on a part time or casual basis. Fathers generally appeared to be employed in public services or universities and this further supports the notion that the fathers in the current study were primarily from a higher socioeconomic group.

Due to the small sample size in the current study, correlations were the primary method of data analysis in the current study. The original research design had intended to compare fathers on all factors according to whether they had high or low EPDS scores. This would have allowed for analysis of variance (ANOVA) to compare the differences in exposure to children, preparation, social adjustment, role of the father and social support in fathers with higher and lower experiences of depression. Furthermore, after beginning to analyse the results initially it was also identified that regression or factor analyses may have also be an informative method of analysis to determine the degree that each factor impacted on post natal depression. As it was, the fact that only 32 participants came forward to participate in this study indicates there were too few participants to separate high and low EPDS groups, given only four of the current participants were identified as having high EPDS scores.

Despite this, the current study has uncovered some interested findings about how these factors are related to post natal depression in first time fathers and this is a preliminary study which has opened up possibilities for future research.

Future studies may also consider a repeated measures design to see how fathers are either coping prior to the birth of their children or at several intervals after the birth, in a longitudinal study. The current study's aim was not to retest or conduct follow up interviews, therefore it is hard to know whether these fathers results might be found in fathers at any other time in their lives or whether it was isolated to the period following the birth of their baby. Control groups may also be considered to compare these factors in groups of men who were not fathers. As previously stated, Dudley et al (2001) provided data in comparing depressed and non-depressed fathers reports of depression, however these could not be compared with the current data due to the different version of the GHQ being used and the different scoring systems used between studies. This adds support to the notion of using a control group in future studies.

Although the EPDS has been tested for its validity and reliability across many cultures and gender, perhaps a measure which specifically targets male's thoughts and feelings is required. The EPDS does not necessarily measure the symptoms/thoughts which manifest in men following the birth of a child such as reduced sex, and attention from their partner, change in social roles which were identified by Hickie (Beyond Blue, 2004) as unique to fathers. Given previous research reports that marital disharmony is related to post natal depression in both mothers (Kumar and Robson, 1984; Dudley et

al, 2001) and fathers (Harvey and McGrath, 1988; Dudley et al, 2001), there is also merit in including a measure of marital satisfaction in future studies.

Conclusions

The results of this study do appear to reflect and support previous literature that fathers do experience symptoms of depression following the birth of a child. In the current study 18.5% of fathers experienced some psychological distress (12.5% experiencing post natal depression specifically) and 25% reporting difficulties with social adjustment since their baby's birth. This may be attributed to a number of factors, including some identified in this study. These rates appear to be higher than prevalence reported in fathers at other times in their lives as reported by Robins et al (1984).

Poor preparation and adjustment to changing responsibilities has been discussed by O'Hara (1987) and other researchers (Beyond Blue, 2004). In the current study a relationship between psychological distress and preparation was found, with fathers who identified they had planned the birth of their baby reporting feeling less depressed. Furthermore, fathers who had actively sought information from books, the internet, and videos reporting less anxiety and insomnia. Due to this, preparation is important in assisting coping following the birth of their child especially as fathers don't have the same opportunity to gather information informally (Cronenwett and Kunst-Wilson in Ballard and Davis, 1996) and have limited formal training (Colman and Colman (1971). Fathers can take an active role in preparing themselves for fatherhood by seeking information from specialists, the internet, family and friends. This can perhaps be part of the decision making process when planning the birth of a

child which also appears to impact on the experience of depression in new fathers. Attending prenatal classes appears to be part of the process during a couples' pregnancy and in the current study the majority of fathers attended.

Men may need to also consider preparing themselves for fatherhood by interacting with children and participating in activities which they may be expected to do as fathers such as feeding, cleaning and interacting with children. In the current study fathers who had some previous involvement with children were less likely to report psychological distress. Interacting with children is certainly something that can be encouraged in men who are planning the birth of a child to be exposed to these activities with friends' children. This can reduce the unknown when it is time for fathers to play a care giving role with their own child.

A father's preparation is not necessarily the only factor to assist the transition to fatherhood. His partner's support and how this influences the father's expectations of his role can also mould the father's behaviour towards his child. Social support was significantly related to the father's expectations of his role with fathers who reported more support indicating they play an important role in caring for their child. This is an important factor in the father making the transition to his role as father and caregiver as lack of support for new fathers can entrench the mother as the primary carer of the child (Palkowitz, 1984) and this can reinforce feelings of incompetence and exacerbate confusion in relation to changes in roles within the family. Furthermore, the perception that one does not play an important role in a child's development and socialisation was significantly related to experiences of psychological distress in the current study.

The importance of this research is not just evident in this study identifying how fathers can prepare for the transition to fatherhood but also in previous research highlighting the impact of parental mental illness on children. Previous research (Silk et al, 2006) has found that approximately 61% of children of parents with an affective disorder will also develop a psychiatric disorder during childhood and adolescence and associations between paternal depression and emotional, conduct and hyperactivity scales, particularly in boys have also been identified (Ramchandani, et al 2005). Other research has identified that children whose parents experience depression can themselves have impaired self concepts, be more self critical and have more difficulties with peer relationships (Goodman et al, 1993).

In the current social and economic climate with increased pressure on children to perform well academically, socially and physically, children need to be given advantages and opportunity to thrive right from the word go. Previous research into child development has often reported how maternal depression (in particular post natally) can impact on the mothers quality of care for her child (Downey and Coyne 1990) as they can be less responsive to their children, more angry, sad and less positive (Silk et al, 2006). The same comment may also apply to fathers. Thus future research is required into post natal depression in fathers so that it can be understood how fathers can adequately prepare for fatherhood to minimise the impact of distress on children which is currently compromising the stability and strength of the nuclear family.

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Table of Appendices

Participant Forms

Appendix 1

EDINBURGH POSTNATAL DEPRESSION SCALE (EPDS)

JL Cox, JM Holden, R Sagovsky
Department of Psychiatry, University of Edinburgh

Name: ..... Baby's Age: .....

As you have recently had a baby, we would like to know how you are feeling. Please underline the answer that comes the closest to how you felt during the past seven days.

Here is an example already completed:
I have felt happy:
Yes, all the time
Yes, most of the time
No, not very often
No, not at all

This would mean 'I have felt happy most of the time' during the past week. Please complete the other questions in the same way.

In the past 7 days:

1. **I have been able to laugh and see the funny side of things**
   As much as I always could
   Not quite as much now
   Definitely not so much now
   Not at all

2. **I have looked forward with enjoyment to things**
   As much as I ever did
   Rather less than I used to
   Definitely less than I used to
   Hardly at all

*3. **I have blamed myself unnecessarily when things went wrong**
   Yes, most of the time
   Yes, some of the time
   Not very often
   No, never

4. **I have been anxious or worried for no good reason**
   No, not at all
   Hardly ever
   Yes, sometimes
   Yes, very often

*5. **I have felt scared or panicky for no good reason**
   Yes, quite a lot
   Yes, sometimes
   No, not much
   No, not at all

*6. **Things have been getting on top of me**
   Yes most of the time I haven't been able to cope at all
   Yes, sometimes I haven't been coping as well as usual
   No, most of the time I have coped quite well
   No, I have been coping as well as ever

*7. **I have been so unhappy that I have been having difficulty sleeping**
   Yes, most of the time
   Yes, sometimes
   Not very often
   No, not at all

*8. **I have felt sad or miserable**
   Yes, most of the time
   Yes, quite often
   Not very often
   No not at all

*9. **I have been so unhappy that I have been crying**
   Yes, most of the time
   Yes, quite often
   Only occasionally
   No, never

*10. **The thought of harming myself has occurred to me**
   Yes, quite often
   Sometimes
   Hardly ever
   Never

I have been given the opportunity to understand and discuss my result.

Signed: ..... Date: .....

Appendix 2

THE GENERAL HEALTH QUESTIONNAIRE

GHQ 28

David Goldberg

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Appendix 3

The Social Support Network

This questionnaire has been removed for copyright or proprietary reasons.

Flaherty, Gaviria, 1981;
Reprints or permission to photocopy, address:
J.A. Flaherty, M.D., 912 S. Wood Street
Chicago, IL 60612
or email: jflaherty@uic.edu

Appendix 4

Role of the Father Questionnaire (ROFQ)

For the following items place the letter that indicates your feelings in the blank. Use the scale below.
a = agree strongly
b = agree moderately
c = neither agree or disagree
d= disagree moderately
e= disagree strongly

---

1. It is essential for the child's well being that fathers spend time interacting and playing with their children.

2. It is difficult for men to express tender and affecfionate feelings toward babies.

3. Fathers play a central role 'in the child's personality development.

4. The responsibilities of fatherhood never overshadow the joys.

5. Fathers are able to enjoy children more when the children are older and don't require so much care.

6. Very young babies are generally able to sense an adult's moods and feelings. For example, a baby can tell when you are angry.

7. Very young babies are affected by adults' moods and feelings. For example, if you are angry with a baby he/she may feel hurt.

8. The most important thing a man can invest time and energy into is his family.

9. A father should be as heavily involved in the care of a baby as the mother is.

10. Mothers are naturally more sensitive caregivers than fathers are.

11. Even when a baby is very young it is important for a father to set a good example for his baby.

12. It is as important for a father to meet a baby's psychological needs as it is for the mother to do so.

13. It is important to respond qw'ckly to a young a baby each time it cries.

14. The way a father treats his baby in the first six months has important life-long effects on the child.

15. All things considered, fatherhood is a highly rewarding experience.

Appendix 5

Exposure Interview for New Fathers

Participant Number ..... Age .....

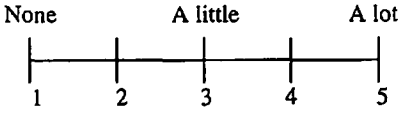
Marital Status ..... Employment Status.....

Previous psychological illness (please specify) .....

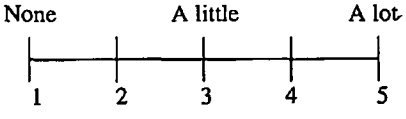
This questionnaire is designed to identify your exposure to children, information, education, support and your expectations of fatherhood prior to the birth of their child. Please take your time, answer all questions and be as accurate as possible.

1. How many young brother and sisters did you grow up with? .....
2. How many of your friends have children? .....

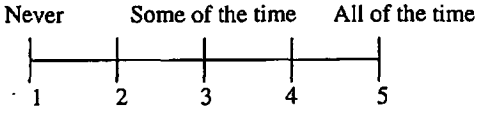
3. Before you had a child, how much experience did you have with other people's young children?



4. Before you had a child, how often would you have responsibility for washing, changing, or feeding other people's young children?



5. Before you had a child, how often would you have read to, played with or cared for other people's young children?



6. Was the birth of your child planned? Y/N

7. Prior to or following the birth of your child, did you receive any paid leave for the purpose of adjusting to the birth? Y/N How long?

8. Were there any complications during your partner's pregnancy? Y/N
Please specify

9. Were there any complications during the birth of your child? Y/N
Please specify

10. During your partner's pregnancy were you involved in any structured antenatal classes? Y/N
Please Specify

11. To prepare for fatherhood, did you seek information or read parenthood books or pamphlets? Y/N Please Specify

12. Did personal accounts from other fathers influence your expectations of fatherhood? Y/N
If yes, how so?

How can your participation help?

Not many people realise that post natal depression can be experienced my males as well as females. However males find it just as difficult to adjust to the changes that occur when a new baby arrives and experience many of the symptoms that females do such as fatigue, irritability and loss of libido.

Like anything in our lives, in order to cope with different or stressful situations we need to understand how our lives may be affected and what we can do to cope. Having a child is supposed to be an enjoyable rather than stressful experience.

By providing us with information from your personal experiences about how you prepare for the birth of your child, you can help provide us with a better understanding of how symptoms of post natal depression in males can be reduced or prevented.

If you have queries or you wish to participate in this research, please do not hesitate to contact the researchers for more information.

Claire Harvey 04.. ... ... (Phone)
or Claire.Harvey@utas.edu.au (Email)

Dr Iain Montgomery 6226 2386 (Phone)
or Iain.Montgomery@utas.edu.au (Email)

UNIVERSITY
OF TASMANIA

Masters in Clinical Psychology Research

Post Natal Depression in Males: How do you prepare for fatherhood?

Information for Fathers

Research conducted by Claire Harvey and
Dr Iain Montgomery

What is this study about?

This study is interested in how males prepare for fatherhood and how this preparation can reduce the risk of them developing post natal depression.

Some factors which will be taken into consideration are the support and information fathers receive, the education they seek and the level of involvement with children they have prior to their transition to fatherhood.

Who can participate in this study?

Any man who has recently become a new father can participate in this study. This means they cannot have fathered a child before. It is also required that the baby is aged between 6 and 12 weeks of age.

What is involved with the research?

Fathers who choose to participate in this research will be asked to complete six questionnaires.

-The Social Adjustment Scale

-Edinburgh PND Scale

-General Health Questionnaire

-The Role of the Father Questionnaire

-The Exposure Interview for New Fathers

- Social Support Network Inventory

Approximately forty minutes will be required to complete these.

Where will the interview take place?

Fathers will be interviewed at a community health centre of their choice or another negotiated place which is convenient to the father and the researcher.

Confidentiality

This project has been approved by the School of Psychology and the Human Research Ethics (Tasmania) Network.

Participants can be assured their anonymity will be protected at all times. No personal information which can be used to identify participants will be recorded with the questionnaires.

Appendix 7

Postnatal depression in fathers: Does antenatal preparation alleviate symptoms?

Chief Investigator: Dr Iain Montgomery Investigator: Claire Harvey

My name is Claire Harvey and I am conducting this investigation as part of my Masters of Clinical Psychology Degree at the University of Tasmania for 2005/2006.

The aim of this investigation is to determine how post natal depression develops in males. The primary area of interest is to establish how exposure to childrearing related information (such as involvement in antenatal classes, previous exposure to children, education and support) may help to alleviate the post natal depressive symptoms that are sometimes experienced by males. In recent years it has been acknowledged that the events, feelings and thoughts that accompany child birth not only impact on mothers but also on fathers as they play a major role, not just in child rearing but also in the financial and emotional support of their partner. Your participation is appreciated and valuable as males who have recently had their first child, are invited to contribute to this project. Your participation will be valuable because you can provide personal insight which may benefit fathers in preparing for fatherhood in the future.

Exclusion Criteria

Previous research has found that males whose partners experience psychological disorders (such as depression or anxiety) have an increased risk of experiencing post natal depressive symptoms themselves because of the added emotional and physical demands that this brings to the relationship. Due to this, males whose wives are identified as having a psychological disorder will be excluded from participating in this particular project. However it is important to understand that this is not due to any personal reason but the fact that current investigation acknowledges that this factor will increase the likelihood of males in the study having post natal depression and we need to control for it. Males will also be excluded if they have previously fathered a child. The reason for this is because the nature of this study is interested in how previous exposure to information and support impact on the development of post natal depression and fathering a child in the past constitutes previous exposure and will render the other factors void for this investigation.

Study procedures

If you decide to participate in this investigation you will complete a number of questionnaires to obtain exposure and post natal depression information.

If you are not excluded from participation, you will also be asked to complete the Edinburgh Post Natal Depression Scale (EPDS) to identify whether you experience post natal depressive symptoms. It takes approximately five minutes to complete 10 questions. If it appears that you are experiencing some symptoms, information for possible interventions can be discussed, such as counselling to help you adjust to your new lifestyle, if you wish.

A number of other questionnaires will be used. The General Health Questionnaire will be used to identify your medical condition in the last few weeks, the Social Support Network Inventory will be used to identify your primary sources of support, the Social Adjustment Scale will measure adjustment at work, socially and financially since the birth of your child and the Role of the Father Questionnaire will identify your attitudes towards fatherhood. We realise this is personal information however they are all important factors which may impact on how you adjust to life after the birth of your first child.

Finally, the investigators have designed an interview to measure exposure to child related information, education and support as well as expectations that are formed about fatherhood based on this information.

Testing will take place at the medical centre or family planning clinic that your partner and child receive their checkups. Alternatively other arrangements may be made so there is no cost imposed

on you. Overall, approximately 40 minutes of your time will be allocated to completing the questionnaires and interview.

Possible risks or discomforts
There are no risks associated with participating in this study. However you may be thinking about issues which you had not considered before. Furthermore, identification of post natal depression may be concerning to males and their partners, however as mentioned before this will be addressed by offering counselling from the investigators or making a referral to a psychologist who can help you do deal with these issues.

Confidentiality
All information that is provided by participants will be confidential. You will provide personal information but this will kept strictly confidential. You cannot be identified through the questionnaires or the interview. Before you begin testing, a code will be placed on each of your questionnaires and interview so that the information you provide can correspond however this cannot be linked to your name or personal details at all.

Data from the project will be stored in a secure locked cabinet by the investigators at the University of Tasmania. This data must be stored for 5 years and may be used for other related research in Tasmania however this will still be confidential and personal participant information will not be associated with this raw data. At the end of the 5 year period data stored on disks will be erased and burned and the questionnaires will be shredded.

Freedom to refuse or withdraw
At any time during the course of experimentation you can refuse or withdraw your participation. Your participation is appreciated but entirely voluntary and you should feel free to withdraw at any time without any personal, financial or academic consequences. If withdrawal occurs due to emotional or psychological trauma, debriefing and/or counselling will be available automatically.

Contact persons
If at any stage during the study you have concerns or questions, please feel free to contact the investigators. Either I can be contacted on 04.. ... ... (Claire.Harvey@utas.edu.au) or alternatively the Chief Investigator Dr Iain Montgomery can be contacted on 6226 2386.

Statement regarding approval
The design and procedures for the current investigation have been placed under stringent assessment by the University of Tasmania's School of Psychology and the Southern Tasmania Social Sciences Human Research Ethics Committee and it has been approved by both. This approval is based on the condition that the experimental procedures is carried out as instructed in this information sheet and that any potential risks to you are minimised or prevented.

Concerns or complaints
Any ethical concerns about the nature of this study or the manner it is conducted which cannot be discussed with the investigators, can be addressed by contacting the Chair or Executive Officer of the Southern Tasmania Social Sciences Human Research Ethics Committee. These details are A/Professor Gino DalPont (6226 2078) (Chair) or Amanda McAully (6226 2763) (Executive Officer).

Results of investigation
If you wish to receive information about the results of this study an appointment can be made at the end of the study to discuss these or they can be mailed to you if you prefer.

Appendix 8

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CONSENT FORM

Postnatal depression in fathers: Does antenatal preparation alleviate symptoms?

1. I have read and understood the 'Information Sheet' for this study.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves the completion of a number of questionnaires and an interview which will be used to identify post natal depression, level of support, exposure and adjustment to child birth and that I may be excluded from participation due to a number of control measures which are not intended to discriminate or alienate me.
4. I understand I may be exposed to questions which target emotional events or issues relating to my preparation for fatherhood and my expectations and role as a father.
5. I understand that all research data will be securely stored on the University of Tasmania premises for a period of 5 years. The data will be destroyed at the end of 5 years.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered for the study may be published provided that I cannot be identified as a subject.
8. I have been informed that debriefing and counselling will be provided by the School of Psychology in the event that I experience some emotional uneasiness during this investigation.
9. I agree to participate in this investigation and understand that I may withdraw at any time without any financial, academic or personal consequences.

Name of participant _____

Signature of participant _____ Date _____

10. I have explained this project and the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation.

Name of investigator _____

Signature of investigator _____ Date _____